J. H. Vande Vegt

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EVOLUTION IN THE BALANCES

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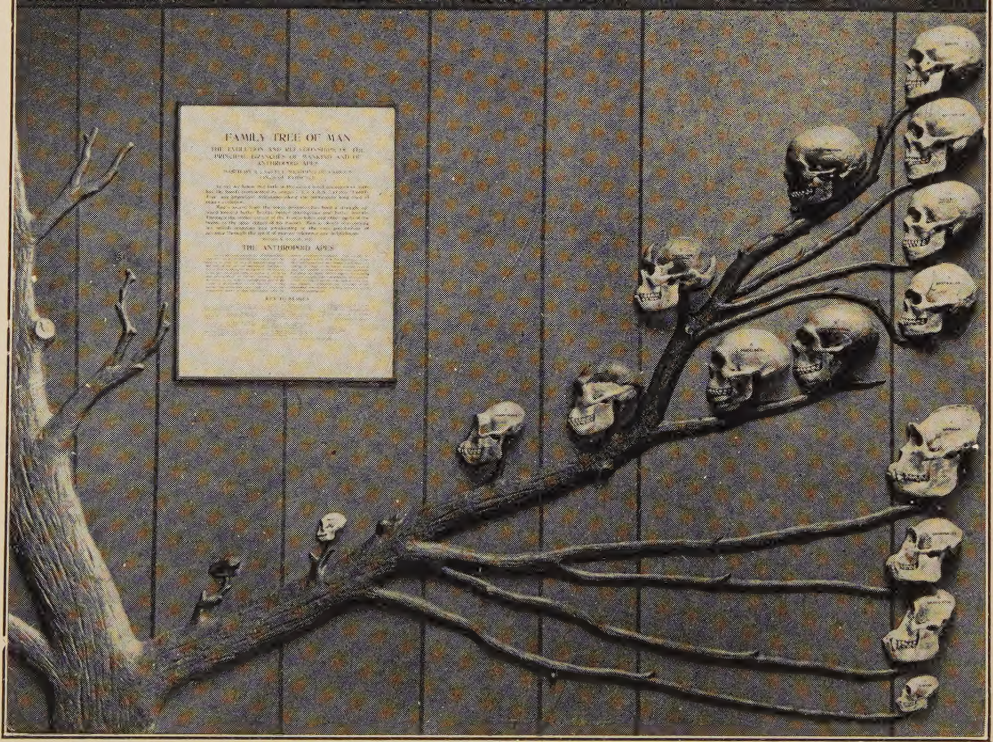
FAMILY TREE OF MAN
THE EVOLUTION AND RELATIONSHIPS OF THE PRINCIPAL BRANCHES OF MANKIND AND OF ANTHROPOID APES
THE ANTHROPOID APES

The Family Tree of Man as Displayed at the American Museum of Natural History, N. Y.
The six fossils in the upper right hand corner are the only ones which we have reason to believe were skulls of men.

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Evolution
In the Balances

By

FRANK E. ALLEN

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Winnipeg, Canada
Author of "Practical Lectures on the Book of Job."

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To My Father

FOREWORD

THE larger part of the material which appears in this volume was prepared originally as a series of articles which appeared simultaneously in *The Presbyterian and Herald and Presbyter* of Philadelphia, and *The Christian Nation* of New York. In response to the request of the editor of *The Biblical Recorder* of New Zealand he has been granted the privilege of reprinting the articles in his magazine. The editors and the author have received a shower of letters requesting the publication of these articles in permanent form. These requests have come from several different countries and from various States of the Union. They have come from college and seminary professors, from editors of papers of several different denominations, from fathers and mothers who have been distressed concerning the skeptical education which their children have been receiving, from ministers of the Gospel and from men of various walks of life.

In response to these persistent and earnest requests the author has revised, corrected and enlarged the original articles and is sending forth the work in another form in order that it may instruct, encourage and strengthen any who may be seeking light on the subject of evolution. He is particularly desirous that younger people who are in the formative period of life may have the truth set before them and may have a reasonable and scriptural explanation of natural phenomena in order to dispel their doubts.

Reference is made in the body of this volume to a number of works which have been helpful to the author in his study of this subject. The subject has been one of interest to him ever since his college days in the early years of the present century, during the years that he was teaching science, and since that time in his ministerial work and contact with educators and young people. He desires especially to acknowledge his indebtedness to Professor Frank Allen, M.A., Ph.D., LL.D., F.R.S.C., (not related to the writer), head of the department of physics of the University of Manitoba, who gave many valuable suggestions and who reviewed the articles before they were printed in serial form. Professor Allen is of first rank in his own department and has made investigations in the department of physiology and bio-physics which have gained for him distinction in the scientific world. He is a man who has firm faith in the Word of God and who does not accept evolution in its commonly accepted sense. He believes in the possibility of great development both among men and animals, but he utterly rejects the idea that a fish evolved into a bird, or a bird into an animal, or a fox-like animal into a horse. His firm faith, sound scholarship and sane views of science have been an inspiration to the writer and it is with great pleasure that he makes acknowledgment of the assistance which he has received from him.

This work is sent forth with the desire that it may ascribe honor to Almighty God as the Creator and Preserver of all things, and with the prayer that it may strengthen the faith of those whose souls are beset with a blighting propaganda of intellectual doubt.

F. E. A.

Winnipeg, Canada.

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I

INTRODUCTION

FOR some years past it has been difficult to arouse more than a languid interest among people other than students in the subject of evolution. It was regarded as a scientific study with which the average man had no concern. During the past few months, however, the discussion of evolution has been drawn from the class-room to the dining-room and the work-shop.

The public in general was not concerned with the law of Tennessee until John T. Scopes was tried for breaking it. Then, partly because of the nature of the case and partly because the late Hon. William Jennings Bryan and some other noted men were connected with the case, the law and the subject of evolution enlisted world-wide interest.

When Mr. Scopes allowed himself to be made a test case and the trial began, frequent charges of persecution were heard. Was Mr. Scopes persecuted as were Copernicus and Galileo? To the man who pauses to think the matter through, there is no reasonable comparison. Copernicus was a priest, not primarily a scientist. The Ptolemaic system, which had been worked out by Ptolemy, had been regarded as the " Scripture of astronomy " for fourteen hundred years. When Copernicus asserted that the earth rotated on its axis, in contradistinction to Ptolemy, the Roman Catholic clergy, who were the conservatives in science, charged Copernicus with heresy. The clergy were simply holding to the theory which the scientists had been teaching for fourteen hundred years. When Galileo added proof to the Copernican theory with his telescope, he was handed over to the inquisition. The opposition of the clergy to Galileo, however, was partly personal and not wholly because of the theory of science which he supported. There is nothing here to be compared with the effort to enforce a reasonable law which has been enacted by a state legislature. The Catholic clergy were not alone in condemning Copernicus. Most scientists held to the Ptolemaic system long after Copernicus had announced another. It was nearly a century before the Copernican theory finally replaced the Ptolemaic. In the oldest American universities, Harvard and Yale, the Ptolemaic system was for a considerable time taught in connection with the Copernican.

Suppose some one should teach Christian Science in the public schools in place of physiology. Suppose this became quite a common thing in the schools, and the people should become so strongly opposed that they should induce the state legislature to pass a law forbidding the teaching of Christian Science in the public schools. One of the teachers, in order to test the constitutionality of the law, deliberately continues to teach the theories of Christian Science. He affirms that he has evidence of the truth of Christian Science, that the nerves do not actually function as the physiologists say they do, and that he is confident there is no pain. He can bring forward a number of prominent people who will testify that there is no pain. He teaches with equal confidence that there are no germs and no diseases. Would it be persecution if the officials should arrest him and prosecute him for breaking the law? Nothing stands in the way of teaching Christian Science privately if one chooses to do so, but he should not be permitted to teach it in the public schools. Nothing stood in the way of Mr. Scopes if he wished to teach evolution privately. Even in his position as a public school teacher, he could have taught evolution all the way up to man: he could have taught the children all the theories of Darwin if he had not taught them as facts, and he would not have been guilty in the sight of the law.

Judge C. T. Marshall, chief justice of the Ohio Supreme Court, in an address in Cleveland before two hundred law students, very properly criticised Clarence Darrow as " an example of the unethical practitioner which would bring upon him the condemnation of all self-respecting members of the bench and bar. The law in that case was plain and simple. Neither the indictment nor the statute under which the indictment was framed contained any mention of evolution, neither did they in the remotest degree involve or necessarily provoke any discussion of the theory of evolution. The Tennessee statute provides that it shall be unlawful for any teacher in any public schools of the state to teach any theory that man has descended from a lower order of animals. That the forbidden doctrines were so taught was freely admitted by the defendant. No defense was therefore open except that of the constitutional validity of the law. And yet Darrow sought to browbeat and to bluff the judge into admitting expert evidence upon the soundness of the theory of evolution."

Some have gone so far as to assert that science has been set back a hundred years by the law of Tennessee and the conviction of Mr. Scopes. There is no phase of scientific investigation or fact which is revoked or retarded in any degree. It is for the evolutionists to show in what way the law impedes the advancement of physics or chemistry or astronomy or biology or geology, or any other of the branches of science. It may be admitted that it will interfere with the teaching of some theories which are dogmatically taught as facts by certain biologists and geologists, but it should rather stimulate investigation in order to discover which are facts and which are merely theories.

There is a great deal of confusion as to the meaning of evolution. Evolution may be defined as "The act of unfolding or unrolling in the process of growth or development." The biological definition, as given in *Webster's International Dictionary,* is: "A general name for the history of the steps by which any living organism has acquired the morphological and physiological characters which distinguish it; a gradual unfolding of successive phases of growth or development." A definition given by Joseph LeConte has been widely accepted, which is: "A continuous progressive change, according to fixed laws, and by resident forces." A professor of physiology, at the head of that department in a university known to the writer, and widely acquainted with professors of physiology in the United States, Canada, and the British Isles, was recently asked to state the sense in which his friends understood the word evolution—whether they believed that life originated with a simple germ and evolved through plant and animal life all the way up to, and including man, or whether they regarded the term as simply meaning development within a certain species. The professor replied: "I would have no hesitation in saying that ninety-five per cent. of them believe that evolution means the development of life all the way up to, and including man."

Prof. Alfred Fairhurst says: "Evolution in its widest sense is entirely naturalistic. Its only data are matter and force, or, if it is theistic, it confines God to natural processes, and thus eliminates the supernatural." It will be observed from these definitions that those who use the word and believe that it means simply, *the development of some existing species,* as a better grade of wheat, horses or cattle, *are not using it in the generally accepted scientific sense.*

Even though the acceptance of the theory of evolution is so general, there have never been lacking scientists who did not accept it, except as considered from the standpoint of development within a given species or family. Sir J. William Dawson, the distinguished geologist of McGill University, who lived, taught, and wrote during the period of Darwinian popularity, held firmly to the authority and truthfulness of the Bible and never accepted evolution in any sense which he could not harmonize with the Scriptures. Though he has been dead for a quarter of a century his writings are still valuable and give much information which evolutionists would do well to peruse. Then there have been such men as Prof. Alfred Fairhurst, of Kentucky University, Prof. George McCready Price, now of England, Prof. G. F. Wright, who was on the United States Geological Survey, and many others, who, because they have not held a place in a prominent university or have not written books, are not so well known, but have been capable students of science and just as firmly opposed to the acceptance of the theory of evolution as a fact.

Within the past few years there have been many books written to show the fallacies of the theory of evolution. Beginning with 1902, to the present time, Prof. G. M. Price has written nearly a dozen scientific books in opposition to evolution, outstanding among which is his *New Geology*, published in 1923. The publication of Alfred Fairhurst's earlier books, as well as lectures, did much to awaken the public, but more especially his last book, *Atheism in Our Universities*, aroused the Christian world to see the danger underlying the teaching of evolution. To note that the books of Prof. James H. Leuba, of Bryn Mawr College, on psychology, are published and sold by rationalist organizations is an indication of his views concerning religion. In preparing his book on *Belief in God and Immortality*, he sent a questionnaire to one thousand representative American scientists. This correspondence was confidential, but he asserts that the replies indicated that more than half of them doubt or deny the existence of God and the reality of immortality. He affirms that among biologists not more than thirty-one per cent believe in a personal God. In reply to his questionnaire sent to college students of nine outstanding colleges he found that the number of unbelievers increased from the freshman to the senior year from fifteen to forty-five per cent. Though this was hailed as triumph by rationalists, it has done much to arouse Christians concerning the dangers which surround their children in the universities. Because of his high standing as a scientist, the lectures of Prof. Louis T. More, of the University of Cincinnati, which were delivered at Princeton University in January, 1925, and which have been published in a book entitled *The Dogma of Evolution*, have been widely read and quoted. It is an able argument from an able man against the theory of evolution.

INFLUENCE OF W. J. BRYAN

It was, however, the world-wide influence of the late Hon. William Jennings Bryan in his lectures and writings, and particularly in the case of John T. Scopes, of Tennessee, which placed evolution on the front page of the daily press throughout the world and aroused the common people to its significance. Mr. Bryan says that it was the implications of evolution against Christianity at which he revolted. " It led me to review the doctrine and reject it entirely.[1] He would not think of substituting the law of hate for the law of love as did Darwin. Mr. Bryan was stirred by the many appeals which he received from Christian parents and students because their sons or their friends were being led away from the Christian faith to skepticism or atheism.

A SUPER-DARWIN

In a popular magazine,[2] in an article on *Evolution and Religion,* Dr. Harry E. Fosdick says: " The reputation of a scientist would be secure forever if now he could overthrow evolution and substitute a new hypothesis. He would rise to the rank of Copernicus and Galileo; he would be a super-Darwin." The theory of evolution has never been definitely established. There have been, in every decade of its popularity, men who have successfully refuted its claims. Prof. G. M. Price, in his *New Geology,* has substituted a clearer, saner, and more reasonable hypothesis to account for the present condition of the crust of the earth, than that proposed by the advocates of the theory of evolution. In the field of geology, the science which is particularly relied upon for the proof of evolution, it is an epoch-making book. In my own experience, while teaching science, both in high school and in college, I searched for a text-book on geology, the structure of which was not based upon evolution, but without success. This book is thorough, scientific and true to the record of creation as found in the Scriptures. It will be welcomed by a multitude of students and many professors, who cannot accept the theory of evolution as applied to the past condition of the earth and its inhabitants, but who have not had access to a scientific text-book which clearly refutes it.

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[1] *In His Image,* p. 107.

[2] *Ladies' Home Journal,* Sept., 1925.

In this argument on the subject of evolution we are concerned with the education and enlightenment of all who seek the truth, but particularly with the thousands of young men and women who are being saturated with a theory which tends to unsettle their faith, and which in a multitude of instances leaves them stranded in a state of skepticism or atheism.

II

INSUPERABLE BARRIERS

THERE are some obstacles which stand in the way of the materialistic evolutionist which can never be overcome. Darwin's friend and fellow-worker, A. R. Wallace, set forth some of these in the following statement: "There must have been three interpositions of a divine and supernatural power to account for things as they are. The agreement of science with Genesis is surely very striking. There is a gulf between matter and nothing; another between life and the non-living; and a third between man and the lower creation—and science cannot bridge any of them."

The theistic evolutionist disposes of these difficulties at once by admitting that in these instances there was special creation. He also affirms that he sees design in the preparation of the world and the evolution of life.

While the arguments of this chapter apply especially to the materialistic evolutionist, the theist needs to take cognizance of them not only that he may avoid the lure of the materialist, but also that he may see how inextricably interwoven are the arguments of the materialist and the theist in the matter of evolution. Almost all arguments on behalf of evolution have originally been advanced by a materialist, and the average theist who accepts his theories does not pause to consider to what extremes they lead him.

Without God these barriers which we shall name are insuperable; with God there is no reason for accepting the theory with reference to the origin of the world or the transmutation of species as originally created.

1. *This theory cannot account for the origin of matter.* There could be nothing visible and material to develop into more complex forms until matter was caused to exist, and there was substance to clothe with life and to reproduce other like creatures. But evolution, which is said to continue without design, ignores not only the Creator but the origin of all things. Evolutionists may say, " we have nothing to do with the origin of matter, we assume its very ancient beginning, it is unimportant whether it is eternal or not." But it is important, and it is a fact which cannot be ignored. Things cannot come into existence without a cause, and it is unreasonable to assume that the cause which made them would be wholly indifferent as to their control.

The wonderful system, plan, and method of operation of the universe, not only indicates design, but the design of one who was omniscient. There is evidence everywhere in our world, as well as in the sun, moon and stars, of a beneficent Creator and Preserver of all things.

This is the first great barrier to evolution, and it is an insuperable barrier to the materialistic evolutionist.

We must accept the fact of the origin of matter upon faith. " Through faith we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear."[1] It is useless for the scientist to try to explain in a natural manner that which is beyond the limit of his power to investigate and which must be received upon faith. The scientist may say that he knows nothing about the origin of the material which composes our world, but that does not make him or his followers any wiser. It does, however, add to his wisdom to believe that the worlds were created by the word of God. "The fear of the Lord is the beginning of knowledge."[2] When he accepts this fact it logically follows that he will accept the facts which God has caused to be recorded. He will then have, to begin with, a history which extends beyond the reach of man, and he will avoid useless speculations about the origin of the world, of life and of the various kinds of life. It is just as essential that a scientist in order to be a safe guide shall have faith in God, as that a teacher of philosophy or religion shall have faith.

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[1] Heb. 11: 3.

2. *It cannot account for the origin of life.* It will not do to avoid this important fact by saying, "science is not concerned with the origin of life, it simply takes life as it finds it and observes its development." If science did this and evolutionists were concerned with nothing more, purely imaginative theories would not be promulgated as facts. There has been a great amount of research work done, and a vast amount of material written by scientists concerning the origin of life from dead matter, or spontaneous generation. The only logical conclusion of the materialistic evolutionist is that life originally arose spontaneously, or by natural and material forces, from inorganic matter.

Much has been written upon this subject, but without finding a solution. When one reads these discussions, he is reminded of the pertinent question propounded by a colored woman to her husband after she had watched him ride for an hour on a merry-go-round until he had spent a dollar, all the money that he had: " Pomp, you've done rid a heap and where's you bin? " What has the bio-chemist done when he has worked for years in trying to discover the origin of life? Most scientists see that, when talking of spontaneous generation, they are reasoning in a circle and they have become very reticent about discussing the subject. That Jacques Loeb and others have been able to stimulate the development of an unfertilized egg by physical and chemical stimulants, though it may produce a sensation among materialists, brings us no nearer the solution of the origin of life. After telling of such an experiment performed by himself on the eggs of a common sea urchin by using butyric acid and hypertonic sea water as stimulants, George Barry O'Toole says: " In this there is small consolation for the exponent of abiogenesis " (developing life from lifeless matter). Quoting from another who sizes up the situation aptly, he continues: " A scientist made an egg and hatched an egg. The only unfortunate thing was that the egg he hatched was not the egg he made." [3] It is just as hopeless a task to try to discover the origin of life in matter as to find the cause of perpetual motion in force.

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[2] Prov. 1: 7.

After discussing *The Origin of Life,* through fifty-five pages, O'Toole says that scientists protest: " To deny spontaneous generation is to proclaim a miracle, and natural science cannot have recourse to ' miracles ' in explaining natural phenomena. For the ' scientist,' miracles are always absurd as contradicting the uniformity of nature, and to recur to them for the solution of scientific problem is, to put it mildly, distinctly out of the question." [4] We are unable to agree with Dr. O'Toole's closing paragraph on this point when he declares that the endowment of matter with life in the beginning was not supernatural. To call it a "purely natural event" is equivalent to saying, a miracle is a natural event.

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[3] *The Case Against Evolution,* p. 160.

The only way to account for the origin of life is by supernatural creation. It is made clear in the record of creation as found in Genesis, in the first chapter of the Gospel by John, and elsewhere in Scripture, that God was definitely and directly the cause of the origin of all kinds of life. "All things were made by him; and without him was not anything made that was made." [5]

If, then, we must accept the divine record of the origin of life, it is just as reasonable to accept the same record which tells of the supernatural creation of the various kinds of life. It is distinctly stated that God made grass, herbs, trees, fish, fowl, cattle, beasts, creeping things, and every living creature after his kind.[6] To affirm that God created a simple primordial germ of life, out of which all higher forms evolved, is to ignore and pervert the record of creation. We cannot leave out or put into Scripture what pleases us without offending God just as seriously as if we ignore it altogether. It is not unscientific to accept the oldest, the most reasonable, and the best authenticated record of creation to be found. That record is found in the Bible.

3. *It cannot account for the origin of complex life.*

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[4] *Op. cit.*, p. 188. [5] John 1: 3. [6] Gen. 1: 20-25.

No evidence exists to prove evolution from a single germ to complex life. Such evidence has not been observed in contemporary life, and it can never be discovered in fossil or extinct life. Frequently it is asserted that the gaps existing between different types of creatures are being filled in by fossil forms, and that as investigation is continued, the evidence will finally be complete. The most sanguine evolutionist, who is well-informed, knows that this cannot be true. There is one great gap which, according to most scientists, extends over millions of years, in which there is not only no evidence, but in which there is no possibility of ever discovering fossil evidence of evolution. Evolution is supposed to have begun with a simple germ of protoplasm. This, however, is a pure guess, and must ever remain a guess. There *can be no fossil of a microscopic monad* which has no calcareous frame. Nor could there be fossils of visible small creatures which had no bones, shells or similar hard structures. Therefore evolution must begin with animals quite complex in structure which possess most of the fundamental organs of existing animals.

There is sufficient evidence on record to convince us that small, simply formed germs of life have had an identity of their own which is persistent and fixed. The history of bacteria can not only be traced back to the time of the Greeks, Hebrews and ancient Egyptians, but on beyond that in the fossil remains of so-called pre-historic men and animals. Thus both recorded history and fossil history testify to the same results and therefore the same kind of microbes which produced disease in the most ancient times. Rudolf Virchow, who was a noted anthropologist, said of the bones of the Neanderthal man, which is supposed to be one of the most ancient fossils of man, that there were in them traces of rickets and gout. It is evident, then, that minute microscopic forms of life have retained their identity through countless generations, consequently we may not expect to discover proof of evolution from them in modern times.

Even the theory of development through Mendelian mutations (these we will explain later) cannot apply to these extremely simple forms which reproduce by cell division.

The change from simple to complex forms of life involves the origin of sex or of male and female. The simple form reproduces by cell division, the complex form by cell fusion. The one is the opposite of the other, and it is unreasonable to suppose that such a marvelous revolution took place in the development of life through natural causes.

4. *It cannot account for the difference between plants and animals.* Can any stretch of the imagination account for the development of plants and animals from a primordial germ of life? Plants live on inorganic food; animals live mainly on organic food. The former are deoxydizing agents; the latter are oxydizing agents. The plant takes from the earth that on which the animal lives. The functions of the one are opposed to the other. How could they evolve from a common lower form of life?

5. *It cannot furnish adequate evidence to prove relationship between the varied groups of life.* When did animals develop fish-like organs and power to move, or vertebræ, or feet and legs with an air-breathing apparatus, or when did birds develop feathers? None of these can be shown with any reasonable amount of evidence from ancient life.

Suppose that between all the varied groups of life, or phyla, there could be found fossil forms which have but a slightly different appearance, still there would be no proof that one evolved from the other. It is impossible to prove that fossils which have a similar appearance were ever related. They might have a very similar appearance and still be cross-sterile, as is illustrated by the case of the mule, the product of the donkey and the horse. It is recognized among biologists that appearances are often deceptive as to the relationship of different types.

But the astonishing proposition is that relationship is claimed in cases of which there is not even a similarity of fossil forms.

As an illustration of the scant evidence in certain cases, let us note the change from the Devonian to the Carboniferous era. This is the era when amphibians (creatures such as frogs) with feet and legs and ability to breathe the air are supposed to have developed from fish. The theory is that those animals evolved from fish which were forced to live in shallow water and so compelled to develop an apparatus which would enable them to breathe air, and legs with which to walk on land. What is the evidence to support the theory of so great a change? Let Chamberlain and Salisbury answer: " The most interesting suggestion of advance in land life is found in the footprints of a supposed amphibian named *Peoleoscauropus primœvus,* described by Lea from the Mauch Chunk shale, near Pottsville, Pennsylvania. There are six double imprints, in which the track of the hind foot partially covers that of the front foot. The trail of a tail an inch wide accompanies the footprints. The slab on which they are impressed is ripple-marked and pitted by rain-drops, implying a freshly emerged mud-flat again covered before the impressions were lost."[7] No wonder L. T. More says of this: "The positive evidence of so momentous a change of structure to be derived from six footprints seems a slender one on which to base the continuity of evolution."[8]

A popular writer on *Evolution and Religion* has endeavored to show that God is honored just as greatly, if we accept the theory of the development of complex forms of life by a slow process, as if we accept the account of special creation. This writer makes use of an illustration in which he compares the swift process of an artificially-made flower, with the slow process of the growth of the flower in the garden. Then he asks: "Which is the more wonderful way of making them?"[9] This is an example of the absurdity of his reasoning. He is comparing a flower with a form which is not a flower. He is comparing the process of twisting bits of colored paper into an attractive appearance with the wonderful and mysterious growth of life, and intimating that there is a very close similarity in the product, except that one is made swiftly and the other slowly. The growth of the flower from an ugly bulb by a slow process is the more wonderful because it is the only way of making a flower. The thing that is made by a few strokes of the fingers is not a flower, though it may have something of the appearance of one. God is certainly honored more by that which He makes to live and grow than by any imitations of living things which men may make. God is honored just as greatly by the slow growth of the oak as by the rapid growth of the mushroom. But in neither case could life have appeared without the Almighty power of God. The illustration of the flower, if it proves anything, proves special creation. God alone can make the real flower today, and He must have made it in the beginning. Man can develop varieties of flowers, but he must have life to begin with, and life of the same kind of flower which he develops. Man cannot develop a rose from a potato, and it is just as unreasonable to suppose that there was ever any relationship between the two. There is not the slightest scientific evidence to prove such relationship.

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[7] Vol. II, p. 537.

[8] *The Dogma of Evolution,* p. 155.

[9] H. E. Fosdick, *Ladies' Home Journal,* Sept., 1925, p. 183.

There are many who assert that the theory of evolution places just as much honor upon God as the doctrine of special creation. They contend that if we admit that He endowed a microscopic bit of protoplasm with life and allowed it to evolve all the way up to man, God is honored just as greatly as if He created each species which formerly existed or is found in the world today. Is it as great an honor to man to enter a kindergarten and make a mark on a sheet of paper as it is to write *Paradise Lost?* Neither is it placing as great honor upon God if we limit His creative work to the formation of a single-celled germ and rule out all creation of complex life. We cannot honor God unless we accept His Word as being true. We cannot set the scriptural record aside, or place our own deistical interpretation upon it, and at the same time prove to reasonable men that we seek the honor of the God who gave us the Scriptures for our enlightenment and instruction.

6. *It cannot account for the rational and spiritual nature of man.* Between the brain of the animal and the mind of man there is a great gulf which cannot be

bridged. It is not enough to say that some of the more intelligent animals have remarkable instincts, or that they can be taught many curious tricks: it remains to be shown how these may be favorably compared with the reasoning power of man. What is there in the animal which compares with the soul of man? Has there ever been a desire to worship or a religious revival among beasts? If the psychologist thinks it is unscientific to accept the divine teaching about the soul upon faith, or to study the moral changes which have taken place in men whose character is portrayed in the Word of God, let him explain the marvelous and immediate transformations which have taken place in the lives of men as recorded in such books as Begbie's *Twice-Born Men*, or let him explain the wonderful personal and social changes which follow the work of Christian missionaries in heathen lands! Even Charles Darwin, who thought that he had found "the missing link" in the degraded inhabitants of Tierra del Fuego, admitted that he was mistaken when the followers of Captain Allen Gardiner converted some of them. "The transformation wrought among the Fuegians as a result of the work begun by Gardiner drew from Darwin a frank testimony of astonishment and appreciation, accompanied by a donation to the Society's funds and a request to be made an honorary member."[10]

7. *It cannot account for the evidence of design in nature.* There is evidence of design everywhere in the world. It is, therefore, unreasonable to conclude that nature, or mere chance, is the only phenomenon apparent to the naturalist. The sun and moon work in harmony in their influence upon the world. The stars of

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[10] *The Progress of World-Wide Missions*, R. H. Glover, p. 283.

the universe move upon a harmonious and intricate plan. The broad plains, the rivers, hills, mountains, lakes, and the expanse of the ocean, all contribute to the development, growth and perpetuation of life in the world. " The heavens declare the glory of God; and the firmament showeth his handiwork." [11]

The porcupine's quills, the bee's sting, the cow's horns, the dog's teeth all show, not millenniums of adaptation, but a wonderful preparation and design on the part of their Maker when He placed them in the world and fitted them to live in their environment. The shoulder and muscles of the horse, the endurance of the camel, the docility of the sheep, production of the hen, the abundant milk supply of the cow, all indicate the preparation which a wonderful Designer made for man, the chief object of His creation. The return of the rain, the change of the seasons, the distribution of water, grass, trees, coal, metallic ores, and a multitude of other things for the use of man and beast are so apparent, that failure to see a beneficent plan in it all and a mind and power beyond it all is a blundering oversight, and not the result of careful observation and scrutinizing science. A scientist should observe, not merely individual facts, but the harmony of the facts of nature, for science is said to be classified knowledge. The most evident and most important fact to the observant student of nature is that there is One who is directing and harmonizing and controlling it all.

Charles Darwin left out design definitely and purposely. When his observation in this regard was so defective it is not strange that his conclusions concerning the facts of nature were inaccurate.

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[11] Ps. 19: 1.

III

NATURAL SELECTION DISCREDITED

As the name of Charles Darwin is commonly connected with the theory of evolution, we wish to consider the theory of *natural selection* which he was largely the means of popularizing. Darwin hesitated as to how he should designate his theory. Spencer had already used the phrase, " the survival of the fittest," and this, at first, appealed to Darwin. Ultimately, however, he decided upon the term " natural selection," to express the idea that nature selects and preserves in living creatures every small change of structure or habit which is of advantage to the species, and that in successive generations the improved individuals survive.

Darwin seems to have been influenced, in attempting to find a cause for a progressive change which might produce new species, by the then popular book of Malthus, *On Population*. Malthus reasoned concerning man, that while population increases in a geometrical ratio, his supply of food increases in a much slower manner, by an arithmetical ratio. As a result, the world would necessarily become over-populated and there must be a struggle for existence. This seemed to form a basis for the theory of evolution which Darwin was trying to work out, and he applied it to all living beings, both plants and animals. The year before the publication of Darwin's *Origin of Species*, A. R. Wallace, who, like Darwin, had been influenced by reading

Lyell and Malthus, wrote to him from Borneo in advocacy of the theory of natural selection. Darwin did not arrive at this conclusion by induction, but it was with him at first a matter of deduction. Afterward he tried to prove the theory by experimentation.

Natural selection, in the Darwinian sense, has been proven insufficient to account for evolution, and this fact is recognized by almost all biologists at the present time. John Burroughs, in the opening of an article entitled *A Critical Glance into Darwin,* made the following striking statement: "*Darwin has already been shorn of his selection doctrines as completely as Samson was shorn of his locks.*"[1] Vernon Kellogg says: "The fair truth is that the Darwinian selection theories, considered with regard to their claimed capacity to be an independently sufficient mechanical explanation of descent, stand today seriously discredited in the biological world."[2]

The arguments which we shall consider indicate that the theory of natural selection, whether in the Darwinian or in the broader and popular sense, cannot be substantiated.

1. *An ascent of life by natural selection is not according to fact.* Proof of this may be collected from various sources.

(1) From the Bible. (a) The first chapter of the Bible teaches that God created every creature according to its kind. An honest and faithful interpretation of the record will not permit of the idea that these families or kinds evolved by a slow process from one or a few original germs. (b) Man has sinned, and this has brought with it the tendency to degenerate both in

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[1] *Atlantic Monthly,* Aug., 1920, p. 237.

[2] *Darwinism Today,* p. 5.

man and in the lower creation. Man, in his state of innocence, disobeyed the direct and special command of God. The curse of God followed. God said to Adam: " Cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life; thorns also and thistles shall it bring forth to thee." [3] John Fiske says concerning natural selection: " Theology has much to say about original sin. This original sin is neither more nor less than the brute-inheritance which every man carries with him." This is the inevitable conclusion of the consistent evolutionist. It forms an insuperable barrier between the Christian, and the man who believes that progress upward is due to the process of natural selection in man and beast. There is no fact more clearly set forth in the Scripture, both in its doctrine and its history, than the fact that sin exists in man from his infancy. The sinner tends to go downward, and has ever tended to go downward apart from the uplifting power of God. If man could ascend upward apart from Christ, then Christ died in vain. The natural conclusion of evolution has led multitudes of men to deny the necessity of a supernatural atonement. The theory of natural selection, when carried to its logical conclusion, is fatal to Christianity.

(2) From fossil history. When we compare the fossils of the invertebrates, fishes, reptiles and mammals, with the living representatives of the same order, family or genus, we find the fossils are larger and apparently more robust. J. A. Howe, of the British Museum, says: " *Elephas antiquus,* for instance, attained a more excessive bulk than any other probos-

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[3] Gen. 2: 17, 18.

cidian (order of elephants and mastodons) either before or since. The woolly rhinoceros, the great hippopotamus, the cave bear, cave lion, and giant deer were all larger than their living representatives."[4] Sir William Dawson, comparing the fossils with modern forms, says: "We may almost say that all things left to themselves tend to degenerate, and only a new breathing of the Almighty Spirit can start them again on the path of advancement."[5] Much reasoning for the ascent of life really favors descent. One of the common illustrations to prove the ascent of animals is that of the horse, which is supposed to have evolved from a four or five-toed beast which lived many ages ago and whose fossils are found in the Eocene rocks. The fossils are shown of four, and three toes, and the uppermost of one toe. If this were a true representation, it would prove degeneration, for according to this reasoning, the horse did not develop more toes, but lost some through the ages. Eyeless fish found in caves and wingless insects found in desert islands are illustrations of degeneration, not of progress. It is now known that such changes may be brought about by one step, and that the slow process of evolution is not necessary. The arctic and desert fauna and flora are degenerate in comparison with the more highly developed fossil remains of such regions. This shows that the struggle for existence does not develop higher forms; rather it destroys many and causes degeneration in others. Prof. L. T. More, in his Princeton lectures, wisely draws the conclusion: "If natural selection is a force which can destroy but cannot create species, and if the reasons for this destruction are unknown, of what value is the theory to mankind? "[6]

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[4] *Ency. Brit.*, Art. Pleistocene.

[5] *Modern Ideas of Evolution*, Appendix.

The fossil men found at Cro-Magnon, France, are not less developed, but indicate a more highly developed man, both physically and mentally, than the present race. Dawson says the skeletons of these men show that they had an "immense muscular development." Sir A. Keith says this race "was the finest the world has ever seen." And H. F. Osborn, of Columbia University, says: "I have reason to believe that the Cro-Magnon 'cave-man' could enter any branch of the intellectual life of this university on equal, if not superior, terms with any of the 30,000 students here." No wonder these fossils led Macnamara to say that the tradition of a race of giants "was no myth."

(3) From recorded history. Where development is not directed by man, there is degeneration. This fact is known everywhere, and it is constantly recognized by gardeners and farmers. They know that if fowl, cattle, horses, sheep and grain are left to themselves, they will degenerate. What farmer would ever think of leaving his blooded horses or cattle to run wild and breed promiscuously under the delusion that they would of themselves develop better grades? "It is a fact that all varieties of tame pigeons—tumblers, pouters, carriers, and fantails—left to themselves on a desert island, return to the original slate-colored wild pigeon, even regaining the two dark rings around the legs. That was one of the first things which attracted Darwin's attention, and which ought to have set him on the right track. In the absence of cultivation, the four, some say six, thousand kinds of roses, Marechal Niel

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[6] *Dogma,* p. 240.

and Gloire de Dijon, moss rose and monthly rose, La France and Viscountess Folkestone, become once more the sweet and the simple wild rose." [7]

2. *Much of the theoretical proof has been absurd.* The absurdity of much of the reasoning of Darwin was early pointed out. But as the years have passed and leading scientists have placed their stamp of approval upon the theory, it has been accepted by multitudes, not merely as a theory, but as a fact. Many of the arguments are better adapted to a place in *Puck* than to a sober scientific text-book.

Darwin and others have argued that the long neck of the giraffe is the result of the survival of the fittest. They have asserted that " giraffes which were the highest browsers, and were able during dearths to reach even an inch or two above the others, will often have been preserved." This argument defeats itself because, as the necks of male giraffes are several inches longer than the necks of females, the females, together with the younger giraffes, would all have died, leaving only the long-necked males to perpetuate themselves.

In the effort to prove that acquired traits were perpetuated, Weissman cut off the tails of a number of mice for many generations, but when he found that each generation persisted in growing tails, he gave up the theory which Lamarck had held to be true.

One might think he was being introduced to the childish game, " Cross questions and silly answers," if he were asked the question: " How does the production of red clover depend upon the number of spinsters? " Darwin reasoned soberly that red clover is fertilized only by the bumble-bee; the nests of bees are destroyed by mice; the mice are killed by cats; cats are kept by spinsters; as a result, the more spinsters there are, the more red clover there will be.

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[7] *Science and Christianity,* F. Betex, p. 123.

It was shown by Fabre, who was opposed to the theory of natural selection, that the wasp could not have acquired the skill and habits which it has, by slow degrees. The wasp paralyzes large insects by a single sting. The sting must be inserted in a definite spot and the egg deposited in another definite spot or the insect will not remain in a comatose state while the larva develops. If it does not, the larva will die. The work of the wasp must be performed with extreme exactness or there will be no young wasps.

It has been held that the beauty of the butterflies came about by a process of evolution because the female always selected the most highly colored male. Mayer and Soule tested this theory by painting the wings of butterflies different colors; they also attached male wings to females and female wings to males, but they found no difference in breeding.

3. *Many new organs in the process of development would be a hindrance.* Even if new organs, when fully developed, are an aid to creatures undergoing the process of evolution: before they were fully developed, in many cases they would be a hindrance. Then, by the rule of natural selection, those creatures which began to develop such organs would not survive. For example, it has been supposed that the feathers of birds have been evolved from the scales of reptiles. But of what advantage could the partially developed feather be to the reptile? Would it not rather be a hindrance? Then the reptiles which had acquired such abnormal parts would either lose them or be eliminated in the struggle for survival. Mivart urged that "natural

selection utterly fails to account for the conservation and development of the minute and rudimentary beginnings, the slight and infinitesimal commencements of structures, however useful those structures may afterwards become." [8]

4. *Modern forms of life are usually similar to ancient forms.* Lyell was of the opinion, as were many of the earlier geologists and biologists, that practically all the plants and animals found as fossils are extinct species. Since the discoveries made by the Challenger Expedition, in 1872, scientists know better. They now know that many thousands of living brachiopods, mollusks, crustaceans, and other creatures, are exactly the same as those found in fossil form and buried in the rocks of Australia, Japan, England and America. In rock strata which are supposed to be many hundred thousand years old, there are found multitudes of fossils of plants and animals just like those living today. Dana says: " The most prominent fact with regard to the Tertiary invertebrates is their general resemblance to modern species. Although a number of the genera are extinct, and nearly every Eocene species, there is still a modern look in the remains, and the specimens have often the freshness of shells from a modern beach. Only a special student of the Mollusca can distinguish the Tertiary species from those now living—the common oyster and clam have been found fossil in deposits believed to be of Miocene age. . . .More than 2,000 species of insects, in wonderfully perfect state of preservation, have been obtained from the amber of the Baltic shores." [9] In this amber there are found moths and spiders just like those which trouble us

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[8] *The Genesis of Species,* p. 35.

[9] *Revised Text-book of Geology,* p. 393.

today. The Egyptian mummies of the ichneumon, the serval, the Nubian cat, and the wild-cat, although they are four thousand years old, bear an exact resemblance to these animals of today.

5. *The creatures which survive are not an improved product of a bitter struggle.* Natural selection is based upon the theory of the survival of the fittest, and it is said that a continual warfare is necessary to keep the world from being over-populated. In actual life it may be observed that there are various checks which the All-Wise Creator has placed upon the different types of animals, whether herbivorous or carnivorous, which keep their numbers somewhat constant from century to century. The bee in some mysterious manner regulates the number of queen cells. Even ferocious beasts like lions and tigers do not die from mutual slaughter or starvation. Different kinds of animals have different checks which regulate their multiplication, and the fierce struggle which Darwin imagined does not exist. It may be reasoned theoretically, as Malthus did, that population increases in a geometrical ratio, but, as a matter of fact, it is not true. Some will have several descendants, some will have few, and others will have none. The population of a country may decrease, as was true in France for a number of years, even though peace existed and there was a sufficient food supply. Malthus saw his mistake, and withdrew from his position, at least in part. George Paulin has shown the fallacy of this argument in his book, " No struggle for existence, no natural selection."

6. *The tendency to return to an original type is as universal a law as the tendency to vary.* Notwithstanding all the breeding of pigeons which has extended over more than three thousand years, they will not only

interbreed, but also revert back to their original ancestral type. Exceptions to this rule, where reversion has been prevented, are due to the work of man. Man has chosen his mates with greater care than animals, and yet we do not find the people of one community growing taller and another shorter, or one group growing mentally strong and another weak. It is an example of the common tendency to revert to the median line. Concerning this subject, in his Princeton lectures, Louis T. More said: "Whatever means are adopted, one practice must never be departed from: breeding outside the strain must be rigidly prevented or the organism reverts back to the original stock. . . . The tendency to vary in the same direction is a pure abstraction."[10]

7. *It is impossible to determine the ancestral line of various groups of animals.* There are often similar organs in various groups of animals which are said to have developed independently. The evolutionist is troubled to know what to do with all these ancestors. He does not know which to choose as the progenitors of a certain type. This is indeed an embarrassing dilemma. No wonder Darwin said he had a cold shiver when he thought of the length of time it required for the production of an eye. But one would think that he would have had several shivers when he tried to harmonize his theory of natural selection with the fact that complex eyes similar to those of higher animals are found in the pecten, a bivalve mollusk, and also in the cuttle-fish. These are supposed to have developed independently. How did they appear so suddenly, and how did they develop in these creatures, the one inde-

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[10] Pp. 217, 222.

pendently of the other? The wings of the bird, the bat, the insects and of the pterodactyl (an extinct flying reptile), are supposed to have developed in each type independently. If natural selection accounts for the origin of these, why did they not ascend through a common ancestral type?

Some fishes have electric organs by means of which they can generate a powerful electric shock. In some kinds of fish these organs are found in the head; in some they are found in the tail, and in others they belong to the glandular system and surround the whole body. Not only are these organs supposed to have developed independently, but there are closely related species, as Willey has shown, which have no trace of such an electric apparatus. The noted biologist Mivart, in his *Genesis of Species*, gives many examples of structures which, according to the classification of scientists and the law of natural selection, must have arisen independently. This shows that natural selection as here applied is absurd.

8. *The tendency among animals to aid one another is as manifest as the tendency to destroy.* There are many biologists who believe that the tendency of groups of animals to aid one another is as common and important a factor as the tendency to destroy. Animals band together for mutual protection as well as men. In order to prove this, one simply needs to disturb a hive of bees. The community life of bees and ants is quite complex. One bee cannot live and make a living alone. The queen, the drone and the worker are all needed. Each ant in the community does its part to aid the others.

The swarming habit of a form of worm called the Palolo is most wonderful. The Palolo is found among the coral rocks near Samoa and Fiji. These creatures swarm at exactly the same time every year. It is at midnight at a certain phase of the moon in the last quarter of October. Millions of these worms rise to the surface and go through a process of dividing or budding which is necessary to their reproduction. The little buds formed sink to the bottom like eggs and mature before the same time the following year. They are expert astronomers, and always rise to the surface at the same time. This is necessary to their continued existence through reproduction. It is a very low but essential form of community life.

Cattle on the prairie protect themselves from wild beasts by forming in a circle, with their horns toward the enemy and their calves in the center of the circle. They protect themselves from mosquitos by grazing together in herds and using their tails in mutual defense. Wild geese have their sentinels, which stand alert as guards while the flock feeds, and give warning of any suggestion of danger. Crows in flight turn or rise higher at the warning cry of their leaders. Such facts as these are given to prove that the law of mutual protection may be regarded as being important and tending to counteract the law of destruction.

9. *The accepted laws of heredity rule out natural selection.* The accepted law of heredity, at the present time, is that which is known as "Mendel's Law." The work of Gregor Mendel gained the attention of the world about a quarter of a century ago. Darwin and his followers supposed that plants and animals tend to vary in all directions, and to an unlimited extent. Biologists now believe, according to the laws which Mendel and others have demonstrated, that plants and animals do not vary indefinitely, or in a hit-and-miss

manner, but their variations are circumscribed within very definite limits. Mendel's discovery was a very important contribution to the science of biology. Edwin Grant Conklin says: " At present, it is practically certain that there is no other kind of inheritance than Mendelian." At first, Mendel's theory was thought to reveal the key to organic evolution, but now it seems to lock the front door against it. The late William Bateson, the well-known biologist of Cambridge, said: " Had Mendel's work come into the hands of Darwin, it is not too much to say that the history of the development of evolutionary philosophy would have been very different from that which we have witnessed." When addressing the British Association for the Advancement of Science, D. H. Scott, a noted student of both structural and fossil botany, declared: " For the moment, at all events, the Darwinian period is past, . . . all is again in the melting-pot." [11] We are merely mentioning Mendelism at this point of the discussion; it will be explained more fully in the next chapter.

10. *No new families of plants or animals are being evolved.* The word " family " is used in this place, not in its technical sense, but rather in the sense in which species is used when it is given its broadest and most correct meaning. It is used to include a group of individuals which have descended from a common ancestor and which agree in essential characteristics. We do not use the word " species " in stating this point, because that word is used in such a variety of ways today. What we mean, however, is what Professor Bateson meant when he said, in Toronto: " Variation of many kinds, often considerable, we daily witness, but no

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[11] *Nature,* September 29, 1921.

origin of species."[12] That there are no new plants or animals being evolved is one of the most important arguments against the theory of evolution. We do not pause to present proof of this point in this connection, as the matter will be dealt with more fully when we come to consider the subject of Species.

11. *The logical end of natural selection is revolting and disastrous.* Among intelligent creatures it implies the promotion of the selfish spirit and an approval of hatred and war. Darwin ridiculed the thought of such a result, but those who have witnessed the cataclysm of the summer of 1914 and the four bloody years which followed, and who have sensed the philosophy underlying the outbreak of the war, see, not humor, but tragedy, in the logical end of the survival of the fittest. Darwin once wrote to Lyell: "I have received, in a Manchester newspaper, rather a good squib, showing that I have proved 'might is right,' and therefore that Napoleon is right, and every cheating tradesman is also right."[13] Few have the temerity to favor the logical end of natural selection or the survival of the fittest since the philosophical superman of Nietzsche has appeared in the German war-lords, and since the world has seen the disastrous and demoralizing effect of unadulterated, atheistic selfishness when it brings forth its full-grown fruit. Malthus held that it was a mistake to exercise charity in order to relieve suffering as suffering diminished the population and thus reduced vice, misery and war. Huxley would not follow natural selection to its logical conclusion when applied to man in his social and national relations. It is revolting to the thought of every true Christian.

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[12] *Science,* January, 1922, p. 57.

[13] *Life and Letters,* Vol. II, p. 56.

It is utterly opposed to the life and teachings of Jesus of Nazareth.

12. *The survival of the fittest is not according to the divine plan.* Might does not make right, nor does might always win in nature or among men. "The race is not to the swift, nor the battle to the strong."[14] To the leader of Israel God said, it is "not by might, nor by power, but by my Spirit, saith the Lord of Hosts."[15] "There is no king saved by the multitude of an host: a mighty man is not delivered by much strength."[16] The war-like Esau gives place to the home-loving Jacob. The mighty Pharaoh gives place to the meek Moses. The giants of Gath give place to the down-trodden Hebrew slaves. Fortified Jericho falls before the trumpeting worshippers. Proud Haman, though backed by the Persian hosts, falls before despised Mordecai. Not natural selection, but Almighty God, determines who or what shall survive. Not one sparrow falls without God's notice. The very hairs of your head are numbered.

It is often said that God's providential care does not apply to creatures which have no moral natures. This is not correct, for we are distinctly told that God's care extends to the creatures of the earth, that He feeds "the fowls of the air" and clothes "the grass of the field."[17] "Are not two sparrows sold for a farthing? and one of them shall not fall on the ground withour your Father."[18] "He giveth to the beast his food, and to the young ravens which cry."[19]

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[14] Eccl. 9: 11. [15] Zech. 4: 6. [16] Ps. 33: 16.
[17] Matt. 6: 26, 30. [18] Matt. 10: 29. [19] Ps. 147: 9.

IV

ARE THERE NEW SPECIES?

THE question has been asked thousands of times, and is still being asked, " How do we know that the Creator did not make a few original forms of life, and allow the many species which we see to evolve from them? " *If the evidence does not show that different kinds of creatures were evolved* one from the other in the past, or if it does not show that new species are being produced today, surely we are *bound to conclude* that all the different kinds of animals and plants were *originally created* by the hand of God.

If we are going to discuss *species*, we ought to be able to define the term and to know just what we are talking about. This is a very difficult matter. William Bateson, when addressing the American Association for the Advancement of Science, said: " When students of other sciences ask us what is now currently believed about the origin of species, we have no clear answer to give."[1] One of the difficulties is that scientists do not agree in their definition of species, but even if they did, they are confronted with a very difficult task when they endeavor to apply it to either plant or animal life. Webster's International Dictionary gives this definition: " A species is an ideal group of individuals which are believed to have descended from common ancestors, which agree in essential characteristics, and are capable of indefinitely continued fertile reproduction through the sexes. A *species,* as thus defined, differs from a *variety* or *subspecies* only in the greater stability of its characters and in the absence of individuals intermediate between the related groups."

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[1] *Science*, January, 1922, p. 57.

When we come to the actual grouping of species, biologists differ widely. In 1923, Dr. Franz Baron Nopsca published a book on reptiles in which he gave a new classification, and in doing so speaks of twelve other classifications which have been proposed since 1890. It is stated in *Science,* in a review of this work, that the differences of opinion in these classifications are " largely due to the fact that each author has considered a different character or group of characters as of importance." Of such classifications, Professor Price says: " We must constantly bear in mind the fact that our zoological and botanical classifications are very largely artificial, and within modern times have been re-arranged repeatedly with the avowed purpose of making these classifications conform more closely with the evolutionary theory." [2]

A century and a half ago, Linnæus attempted to classify under a species all the organisms which owe their origin to a single pair in the beginning. Jordan, a French botanist, tried to test species by growing the plants, with the result that " he found that much more minute distinctions than those of Linnæus could be recognized and would be found to breed true to seed." This plan has been followed by botanists and zoologists until more minute distinctions have been made and species have multiplied. Following this method, the two hundred and fifty kinds of wheat which are recognized by the United States Department of Agriculture, as H. M. Hall and F. E. Clements, of the Carnegie Institution of Washington, say, because they breed true, "would thus come to be species." According to the present classification, there are over forty species of cats in the world, and more than twenty species of pigs. Many of these are known to be capable of interbreeding and it is possible that all the cats descended originally from one pair, and likewise the pigs. Prof. More says that "Linnæus found no *difficulty* in reconciling his work with the complete acceptance of the Deluge." That he calculated "the size of Mount Ararat and found that it was ample to be a temporary refuge for all species of animals known to him, and in that day no one else knew as many."[3] Hall and Clements advocate a return to the "species concept of Linnæus and the practice of eminent taxonomists from his time to the present."[4]

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[2] *Phantom of Organic Evolution,* p. 129.

It will thus be seen that many so-called species should be classified merely as varieties, and not as distinct species. If varieties are called species, it may readily be admitted, in that sense, that new species have been produced, and that not through long periods of time, but by one step. If, for instance, one claims, as does Dr. H. E. Fosdick,[5] that in Marquis wheat we have a new species, no one doubts the fact of the development and existence of the wheat: but it may be definitely denied that in this variety we have a new species in the proper sense of that term. During the past year, Mr. S. Larcombe has announced that he has produced a new rust-proof kind of wheat called Axminster, but he merely claims to have a new variety. He does not presume to call it a new species. Judge James H. Logan produced a cross between a blackberry and a raspberry, which is called after its originator, the *loganberry*. He claims that it is a new and distinct species of the Rubus family. But he also claims that it is the only successful and permanent cross between the raspberry and the blackberry ever made. He mentions another which was tried, and sold at an enormous price, but in a few years was found to be worthless. There is nothing in the loganberry, however, which proves evolution, because the blackberry and the raspberry are of the same family and in the cross between the two we have simply a new variety. Eminent biologists who positively assert that they know of no new species being produced in historic times have described more surprising results than this. They call them sports, Mendelian segregates, or mutations. Price, after describing a new variety of sunflower, says: "Scientists are now agreed that probably hundreds and thousands of just such Mendelian segregates have been listed and described as new species, among plants, and birds and insects." And Bateson said: "Plenty of Mendelian combinations would in nature pass the scrutiny of even an exacting systematist, and be given 'specific rank.'"[6]

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[3] *The Dogma of Evolution,* pp. 130, 131.

[4] *The Phylogenetic Method of Taxonomy,* 1923, p. 15.

[5] *Ladies' Home Journal,* September, 1925, p. 180.

As animals are classified by zoologists, from the smallest groups to the largest, we have varieties, species, genera, families, orders, classes and phyla. Professor Price says that the term "family" is now used in about the sense in which Linnæus used the term "species," and the "largest group which we can scientifically conceive of having all descended from a common original pair is the *Family*. . . . For instance, there are some twenty-two species of dogs found in North America, which are included under the family of Canidæ; some twelve species of bears included under the family of Ursidæ; also some eight species of cats included under the Felidæ. All these and many other families are included under the order Carnivora.

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[6] *Science,* January, 1922.

"Now, I am willing to grant that all the cats over the world may have had a common origin; that all of the bears may have had a common origin; or that all the genera included under the Canidæ may have had a common origin. Yet I utterly deny that there is any scientific evidence worthy of the name to intimate that the cats and the bears and the dogs have all sprung from a common more generalized type in the long ago. Of organic evolution in this sense of the term there is not a shred of evidence worthy of being called scientific."[7]

MENDELISM

Charles Darwin is supposed to have made one of the greatest contributions to science during the past century. It has been said that he died "the most honored scientific man in the world." Darwin said of his own work, in 1862: "I look at it as absolutely certain that very much of the Origin will be proved to be rubbish; but I expect and hope that the framework will stand."[8] At that time, Gregor Johann Mendel was experimenting and proving laws of heredity in a far more accurate manner than any of which Darwin had ever conceived. Three years after Darwin made the statement just quoted, and six years after the publication of Darwin's

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[7] *Op. cit.*, pp. 206, 207, 215.

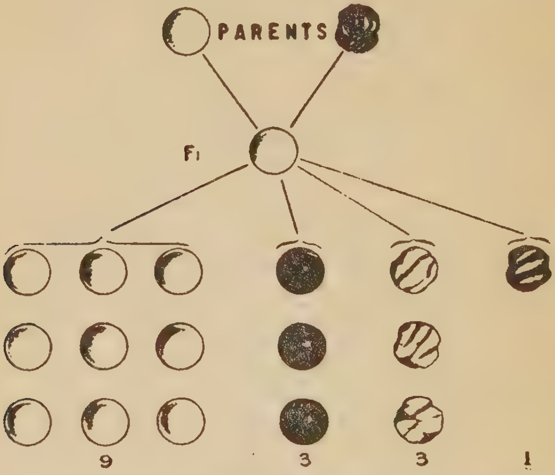
[8] *Atlantic Monthly,* August, 1920, p. 238.

Origin of Species, Mendel published a paper (*Versuche über Pflanzenhybriden*) which, though it attracted but little immediate attention, was to prove Darwin's Origin "*rubbish*." Since Mendel's discovery has come to light in the present century, it has, as O'Toole says, "revolutionized the science of biology, giving it, for the first time, mathematical formulas comparable to those of chemistry." Although Mendel died almost unknown, he gave to the world principles which seem destined to remain. G. M. Price says: "Today these discoveries of Gregor Mendel, with some related discoveries which have since been made, completely dominate the whole of biological research in the field of heredity."

Darwin worked on the theory that individuals vary minutely in all directions and without any known limitation as the generations multiply; that by natural selection the fittest survive. Mendel proved that there is a definite law of variation and that variations may be calculated with mathematical accuracy.

According to Mendelism, there are *fluctuations*, or small individual variations which are due to environment, as changes in climate or food. Fluctuations, it is agreed, are not inherited. Consequently, evolution is not caused by environment, as was formerly held. In some cases there is degeneration, but in no case is there a progressive development due to environment.

Mendel proved that from one of the parents many more characteristics may be inherited than from the other. It is held that each individual possesses a group of qualities called "*unit characters*." These unit characters are often called "*genes*." Some of these genes are called *dominant* and some *recessive*. When an individual which possesses a dominant gene is crossed with another which possesses a recessive gene, the offspring in the first generation will be like the dominant parent. The offspring of the succeeding generations will be in the proportion of three dominant individuals to one recessive. For instance, when a yellow round pea is crossed with a green wrinkled pea, the peas of the first generation are all round yellow. The next generation will have the following proportion, nine round yellow, three round green, three wrinkled yellow and one wrinkled green. Definite results, in a similar fashion, can thus be demonstrated by crossing white and black fowl, or white and black guinea pigs. After investigating thousands of combinations of plants and animals, definite results have in like manner been obtained. The science of breeding plants and animals today is based upon Mendel's law.



Yellow round and green wrinkled peas. In the second generation the proportion is 9: 3: 3: 1. (From *A Critique of the Theory of Evolution*—T. H. MORGAN.)

The biologist, E. W. MacBride, said three years ago: "I well remember the enthusiasm with which the Mendelian theory was received, when it was first introduced to the scientific world in the early years of this century. We thought that at last the key to evolution had been discovered. . . . But as our knowledge of the facts grew, the difficulty of using Mendelian phenomena to explain evolution became apparent, and this early hope sickened and died. The way which Mendel cut was seen to lead into a *cul-de-sac*" (a blind alley).

Mendelian variations could not result in the evolution of species for several reasons. As we have already stated, this law cannot be applied to the simplest forms of life which reproduce by cell-division. Secondly, it is necessary that unit characters shall be present in the parents in order to show in their descendants. Thirdly, if, in any way, a new unit character could be added to the offspring of any pair, it would, in the natural state, be mixed with the race in general, and be lost through inter-breeding. In the domestic state, new combinations can be preserved by isolation, but this would not occur in the natural state.

There are variations which are called *mutations*, and which are exceptions to Mendel's law. These may be divided into two classes, *regressive* and *progressive*. Regressive mutations are changes in inheritance which reveal the loss of certain characteristics which were possessed by the ancestors. Practically all mutations are of this kind. This explains changes in animals which have been found in dark caves and which have lost their sight. These have been named as examples of evolution; they are rather marks of loss or of degeneracy. Prof. T. H. Morgan, of Columbia University, has experimented with the fruit fly through several years, during which time he has produced hundreds of generations. He has produced varieties without eyes and without wings, but these mutations have not come about by a slow process nor have they added any new characteristics to the species. He says: " Formerly we were taught that eyeless animals arose in caves. This shows that they may arise suddenly in glass milk bottles, by a change in a single factor. I may recall in this connection that wingless flies also arose in our cultures by a single mutation. We used to be told that wingless insects occurred on desert islands because those insects that had the best developed wings had been blown out to sea. Whether this is true or not, I will not pretend to say; but, at any rate, wingless insects may also arise, not through a slow process of elimination, but at a single step." [9]

There is another class called *progressive mutations*, or changes in inheritance by factors not possessed by any known ancestors. Here, if anywhere, rests the hope of the evolutionist. Such mutations are very rare, and those which have been declared to be *progressive* are usually found, upon examination, to be *regressive*. But the fact which quenches the hopes of the evolutionist is that, so far as is known, progressive mutations have merely added to the number of characteristics already possessed by other individuals of a given species. No new characteristics have been added to any species.

John Burroughs said: " The mutation theory of DeVries is a much more convincing theory of the origin of species than is Darwin's Natural Selection. If things would only mutate a little oftener; but they seem very reluctant to do so. There does seem to have

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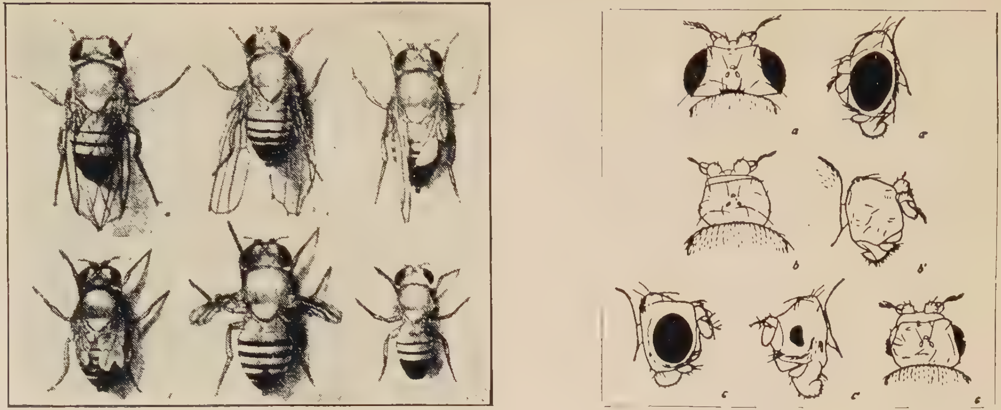
[9] *A Critique of the Theory of Evolution*, p. 67.



Eyeless and Wingless Flies
These Mutations Took Place in One Generation
(From *A Critique of the Theory of Evolution*—T. H. Morgan)

been some mutation among plants—DeVries has discovered several such—but in animal life where are the mutants? When or where has a new species originated in this way? Surely not during the historic period." [10] It possibly should be added to Burrough's statement, that DeVries simply called these mutations "elementary species," and did not present them as genuinely new species.

We quote from the now famous address of the late William Bateson, delivered at Toronto: "We cannot see how differentiation into species came about. *Variation of many kinds, often considerable, we daily witness, but no origin of species.* . . . That particular and essential bit of the theory of evolution which is concerned with *the origin and nature of species remains utterly mysterious.* We no longer feel as we used to do, that the process of variation, now contemporaneously occurring, is the beginning of a work which needs merely the element of time for its completion; for even *time cannot complete that which has not yet begun.* The conclusion in which we were brought up, that species are a product of a summation of variations, ignored the chief attributes of species first pointed out by John Ray that the product of their crosses is frequently sterile in a greater or less degree. Huxley, very early in the debate, pointed out this grave defect in the evidence, but before breeding researches had been made on a large scale, no one felt the objection to be serious. Extended work might be trusted to supply the deficiency. It has not done so, and the significance of the negative evidence can no longer be denied. . . . Now we have *no difficulty in finding evidence of variation by*

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[10] *Atlantic Monthly,* August, 1920, p. 246.

loss. Examples abound, but *variation by addition are rarities, even if there are any which must be so accounted.* . . . The production of indubitably sterile hybrids from completely fertile parents which have arisen under critical observation from a single common origin is the event for which we wait. Until this event is witnessed, *our knowledge of evolution is incomplete in a vital respect.* . . . *The claims of natural selection* as the chief factor in the determination of species have consequently been discredited."[11] Professor Bateson evidently uses the term *species* in its broadest sense, the "species concept of Linnæus," in which Professor Price says the word *Family* is now often used.

Why do students of biology who know these facts *still believe in evolution?* In answer to this question, let us note the reasons given by two of the leading investigators of modern times, the late John Burroughs, and Prof. William Bateson, the former an American, the latter an Englishman.

TWO BIOLOGISTS

John Burroughs was a well-known naturalist. From certain statements which he made in his article on Darwin, quoted above, when he said that Darwin had been shorn of his selection doctrines as Samson had been shorn of his locks, and when he denied that new species have appeared in the historic period, one might think that he at that time, about a year before his death, no longer believed in evolution. But in the same article he affirmed very positively that he still believed in evolution. What reason does he give? He believed it was taught in the "geologic strata." He asserts that no-where is it proved more clearly than in the fossil evidence of the evolution of the horse.

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[11] *Science,* January, 1922, pp. 59-57—italics mine.

The late William Bateson studied on both sides of the Atlantic: he was professor of biology in Cambridge University, president of the British Association for the Advancement of Science, trustee of the British Museum, and director of the John Innes Horticultural Institution. Many of his statements have been quoted by almost all recent writers in opposition to evolution. From the above quotations from his address before the American Association for the Advancement of Science, delivered in Toronto in December, 1921, one might think that he was an ardent anti-evolutionist. He says distinctly, repeatedly and emphatically that no origin of species has been proved; but he says repeatedly and emphatically in that address that he still believes in evolution. To quote his own words: " Distinguishing what is known from what may be believed, we have absolute certainty that new forms of life, new orders and new species have arisen on the earth. That is proved by the paleontological record." He asserts that there were no mammals in paleozoic times, and that " we can be sure there were no Angiosperms—' higher plants ' in the Carboniferous epoch." At one time, Bateson argues that " time cannot complete that which is not yet begun," at another time he states that he " would be as reluctant to draw conclusions as to the specific relationship of a series of fossils as a chemist would be to pronounce on the nature of a series of unknown compounds from an inspection of them in a row of bottles."[12] And yet he affirms that " in the dim outline evolution is evident enough."

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[12] *Science,* April 17, 1922, p. 373.

One of the modern wonders of the world is the hypnotizing effect of a theory. We think of the proverb: A man convinced against his will is of the same opinion still.

Here we have *two eminent biologists who can find no proof of evolution* in their own branch of science: but obsessed with a popular theory and fearful lest science will be imperiled by " the enemies of science," who will " see their chance " (Bateson), *they turn to another branch of science where they are easily duped by skillful manipulators of fossils.* How can they fill up the gaps where there are no fossils? How can they prove that similar forms were ever related? How can they determine whether similar fossils were ever cross-fertile or not? How can they ever be certain that slightly divergent so-called species were not merely mutations? How can they be " *sure* " when at best the evidence is only circumstantial? They could not but know that one may be easily deceived by appearances. Professor Morgan warns against arranging a graded series of forms of the vinegar fly which he has produced. He says it is possible to arrange a graded series, but it " would give a totally false idea of the way the different types have arisen; and any conclusion based on the existence of such a series might very well be entirely erroneous, for the fact that such a series exists bears no relation to the order in which the members have appeared. . . . Historically they have arisen independently of each other."[13]

We shall show in another chapter the futility of the argument from paleontology and geology. We shall show that evolution cannot be proved from the rocks, from the arrangement of the strata, or the fossils which they contain; that the fossils bear no testimony as to the age of rocks. Burroughs feels confident that evolution has been traced from the five-toed to the one-toed horse through " the abysses of geologic time " and " in the calendar of geologic strata." Bateson is " *sure* " that there were no mammals in paleozoic times and " no Angiosperms—' higher plants ' in the Carboniferous epoch." Dr. A. C. Noe has recorded the finding of a large one-toed horse's foot, well carbonized, in a coal bed of the Cretaceous formation—in geologic lore millions of years before its five-toed ancestor—at Scofield, Utah, and an *angiosperm* stem in a coal-ball of the Carboniferous of Harrisburg, Illinois.[14] These facts deprive the arguments of Burroughs and Bateson of every shred of proof in favor of evolution.

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[13] *A Critique of the Theory of Evolution,* pp. 12, 13.

Prof. L. T. More, in his recent lectures at Princeton, after considering the insufficiency of the proof of evolution from paleontology, concludes: " The more one studies palæontology, the more certain one becomes that *evolution is based on faith alone;* exactly the same sort of faith which it is necessary for one to have when he encounters the great mysteries of religion. The changes that are noted as time progresses show no orderly and no consecutive evolutionary chain, and, above all, they give no clue whatsoever as to the cause of variations. . . . *The evidence from palæontology is for discontinuity;* only by faith and imagination is there continuity of variation." [15]

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[11] *A Paleozoic Angiosperm, Journal of Geology,* May-June, 1923, pp. 344-347.

[15] *The Dogma of Evolution,* pp. 160, 161.

V

EMBRYOLOGY

A POPULAR writer has defined embryology as "the study of each individual's evolution from his first beginning in a single cell." Embryonic development in various kinds of animals has been studied somewhat closely for the past one hundred years. The theory has been and is held, that in the development of the embryo there is repeated in a condensed form the ancestral history of higher animals. It is supposed that all the minute steps of evolution of animals, including man, are passed through in the embryonic development of one individual. This is known as the *recapitulation* theory. It has been regarded as one of the most important arguments in favor of evolution. This subject cannot be studied by the average person with any degree of satisfaction, therefore we quote at some length from Adam Sedgwick, professor of zoology at the Imperial College of Science and Technology, London. Speaking of the recapitulation theory, he says: "That explanation which is a deduction from the theory of evolution, is to the effect that the peculiar embryonic structures and relations just mentioned are due to the retention by the embryo of features which, once possessed by the adult ancestor, have been lost in the course of evolution. . . . Now, this explanation, which, it will be observed, can only be entertained on the assumption that the evolution theory is true, has been still further extended by embryologists in a remarkable and frequently unjustifiable manner, and has been applied to all embryonic processes, finally leading to the so-called recapitulation theory, which asserts that embryonic history is a shortened recapitulation of ancestral history or, to use the language of modern zoology, that the ontogeny or development of the individual contains an abbreviated record of phylogeny or development of the race. A theory so important and far-reaching as this requires very careful examination. When we come to look for the facts upon which it is based, we find that *they are non-existent,* for the ancestors of all living animals are dead, and we have no means of knowing what they were like. It is true there are fossil remains of animals which have lived, but they are so imperfect as to be practically useless for the present requirements. Moreover, if they were perfectly preserved, there would be no evidence to show that they were the ancestors of animals now living. . . . Thus the *explanation ordinarily given* of the embryonic structures referred to is *purely a deduction from the evolution theory.* Indeed, *it is even less than this,* for all that can be said is something of this kind: if the evolution theory is true, then it is conceivable that the reason why the embryo of a bird passes through a stage in which its pharynx presents some resemblance to that of a fish is that a remote ancestor of the bird possessed a pharynx with lateral apertures such as are at present found in fishes. . . . The explanation obviously implies the view that in the course of evolution the tendency has been for structures to persist in the embryo after they have been lost in the adult. Is there any justification for this view? It is *clearly impossible to get any direct evidence,* because, as explained above, we have no knowledge of the ancestors of living animals; but if we *assume the evolution theory to be true,* there is a certain amount of *indirect evidence which is distinctly opposed* to the view. As is well known, living birds are without teeth, but it is generally assumed that their edentulous condition has been comparatively recently acquired, and that they are descended from animals which, at a time not very remote from the present, possessed teeth. Yet, *in no single case* has it been definitely shown that any trace of teeth has been developed in the embryo. The same remark applies to a large number of similar cases; for instance, the reduced digits of the bird's hand and foot and the limbs of snakes." Speaking of larvæ, he adds: " The view, then, that embryonic development is essentially a *recapitulation of ancestral history must be given up;* it contains only a few references to ancestral history, namely, those which have been preserved in a much modified form by previous larvæ." Professor Sedgwick then sums up the law of Karl Ernest von Baer, who is called the greatest of modern embryologists: " This generalization may be stated as follows: embryos of different species of the same group are more alike than adults, and the resemblances are greater the younger the embryo examined. Great importance has been attached to this generalization by embryologists and naturalists, and it is very widely accepted. Nevertheless, it is open to serious criticism. If it were true, we should expect to find the *embryos* of closely *similar species* would be *indistinguishable,* but this is *notoriously not the case.* On the contrary, they often differ more than do the adults, in support of which statement the embryos of the different species of Peripatus may be referred to. The generalization undoubtedly had its origin in the fact that there is what may be called a family resemblance, which is by no means exact, is purely superficial, and does not extend to anatomical detail. . . . 'To state that it is a progress from the general to the special is to go altogether beyond the facts.'"[1]

Prof. T. H. Morgan, of Columbia, said: "It was recognized that many embryonic stages could not possibly represent ancestral animals. A young fish with a huge yoke sac attached could scarcely ever have led a happy, free life as an adult individual."[2] It has been said that the human embryo develops gill arches and gill clefts, as does the young fish. The pharyngeal arches of the human embryo never become perforated as in fish and develop into other organs than those which are homologous with gills of fish, and there is no sufficient reason for calling them branchial arches (gills through which water passes) or grooves. Suppose one assumes the theory that man has evolved from the ape, then his theory of evolution is reversed when he compares the young ape with man, for he must concede the fact that the shape of its skull and face is more like man than is the grown animal. According to the recapitulation theory, he would then conclude that the ape had descended from man rather than that man had ascended from the ape.

While a very plausible argument can be devised in favor of the recapitulation theory, there are a multitude of facts which disprove it. Sufficient has been said to show: (1) It is an argument which runs in a circle. As Sedgwick says, the argument in its favor can only be entertained on the assumption that the theory is true. (2) It is based upon paleontology, or upon the theory that evolution is proved by a collection of fossil forms. We shall show, when we consider the argument from geology, that this is incorrect. (3) When an array is presented seeming to prove progression in fossil forms, there is no proof that they are in any way related to the embryo in question. (4) There is admittedly much evidence opposed to the view. For instance, there is no indication of teeth in the embryo of the bird, though it is supposed to have developed from animals which had teeth.

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[1] *Ency. Brit.*, 11th Ed., Vol. IX, pp. 322, 323, 324—italics mine.

[2] *A Critique of the Theory of Evolution*, p. 16.

It is manifest that, however similar embryos may appear, there is a real though invisible distinction. The embryos of horse, pig, rabbit, camel, monkey, and man, however similar they may appear, persist in producing after their kind regardless of all theories of embryologists. That there is no crossing over from one to the other furnishes evidence that there is, and ever has been, a distinct difference formed by the Creator, which, though it cannot be discovered or explained, yet is too evident to be denied.

VI

COMPARATIVE ANATOMY

COMPARATIVE anatomy is the study of similarities and differences in the bodies of living creatures. Statements like the following are frequently made: " Bone for bone, muscle for muscle, organ for organ, scientists find unmistakable correspondence between the different species, until they can be arranged in series and made to display with what slight modifications they might have passed from one to the other. The paddle of a turtle, the wing of a bird, the flipper of a whale, the foreleg of a horse, and the arm of a man reveal the same essential bones and muscles, merely adjusted to different environments and tasks." The same mysticism, however, cannot be thrown about this argument as the former, because men can see for themselves, at least concerning the visible organs of the body, the vast differences. It would take considerable persuasion to convince most men of the ease with which, if they had lost an arm, they could adjust the flipper of a whale to suit their needs and environment.

Scientists distinguish between similar structures in various animals in this way: functional resemblances are *homologous*. These resemblances have been illustrated as follows: the wing of a bird and the arm of a man, both of which are forelimbs, and have a similar fundamental structure of bone, muscle, blood-vessels and nerves, are homologous. The wing of a bird and of a butterfly, which are alike in function, but different in structure, are analogous. The wings of birds and bats are similar in structure and in function, and are both analogous and homologous. Homology is important, because it is taken as the basis for the classification of plants and animals. The animals with typical structures which are homologous, are supposed to belong to the same natural group of plants or animals and to have descended from a common ancestor. Those which have typical structures which are merely analogous, that is, very different structures performing the same function, are said to belong to different groups and to have descended from different ancestors.

In this discussion of homology, O'Toole points out how deceptive it may be made to appear. " Given a class of impressionable premedics and coeds; given an instructor's table with skeletons of a man, a flamingo, an ape and a dog hierarchically arranged thereon; given an instructor sufficiently versed in osteology to direct attention to the points in which the skeletons concur; and there can be no doubt whatever as to psychological result. The student forms spontaneously the notion of a common vertebrate type. He also concludes that this is " a venerable family likeness, posed for originally by a single pair of ancestors."[1] In order, however, to make a reasonable comparison, one should point out the differences as well as the likenesses. In comparing man with the ape, the shape of the spine, the body, the position in which the skull is located on the spine, and other differences, have led Virchow to affirm that " the differences between man and monkey are so wide that almost any fragment is sufficient to diagnose them." Prof. H. F. Osborn says: "From comparative anatomy alone it is possible to arrange a series of living forms which, although structurally a convincing array, because placed in a graded series, may be, nevertheless, in an order inverse to that of the actual historical succession. The most marked case of such inversion in comparative anatomy is that of Carl Gegenbauer, who, in arranging the fins of fishes in support of his theory that the fin of the Australian lung-fish was the most primitive, placed as the primordial type a fin which paleontology has proved to be one of the latest types, if not the last."[2] Thus we are thrown back again to paleontology for our final decision of comparative anatomy.

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[1] P. 54.

For many years the breathing organs of the insects and the arachnids (spiders, scorpions and mites) were thought to be homologous, and they were classed together under the general name, tracheata, as they were supposed to have had a separate origin and to have descended from different ancestors. Their similarity of structure and function remains just as apparent as it formerly did, but still they are considered not to be truly homologous. Dr. Arthur Willey, in his book, *Convergence in Evolution,* gives a great many similar examples. In discussing the digestive organs of fishes, he says: "Facts of this nature apparently take the ground away from any intelligible conception of homology."[3] Professor Price believes that these facts not only apparently, but actually, "remove all scientific basis for regarding homology as of any evidential value in favor of this general doctrine" of organic evolution. Prof. T. H. Morgan, of Columbia, when discussing mutations in certain kinds of flies, says: "If, then, it can be established beyond dispute that similarity or even identity of the same character in different species is not always to be interpreted to mean that both have arisen from a common ancestor, the whole argument from comparative anatomy built upon the descent theory seems to tumble in ruins."[4] One would think that men like Willey and Morgan, in place of trying to explain away the opposition of these facts concerning evolution, would, like Bateson, become "agnostic to the actual mode and processes of evolution." In many cases, the zoologist is in a worse predicament than Solomon when there were two women who claimed to be the mother of one child, for there are several groups of animals which seem to claim a right to be the ancestors of one animal.

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[2] *Ency. Brit.,* Vol. XX, p. 586.
[3] P. 111.

If we are thrown back to paleontology, or "the abysses of geologic time," to make our decisions, in order to determine which are the "latest types," what real value is there in the study of comparative anatomy, as far as evolution is concerned? But, turning for the moment to paleontology for our comparisons, let us look at the evidence of the horse, concerning which John Burroughs said, "In no other case is the record shown more clearly than in that of the horse." One must admit that a comparison of the fossils of feet and heads of the beasts called horses does look persuasive when arranged in a graded series in a museum or in a picture. If one takes a second glance at one of the representations in the American Museum of Natural History he observes that the front quarters seem to have lagged behind the hind quarters in their evolution by

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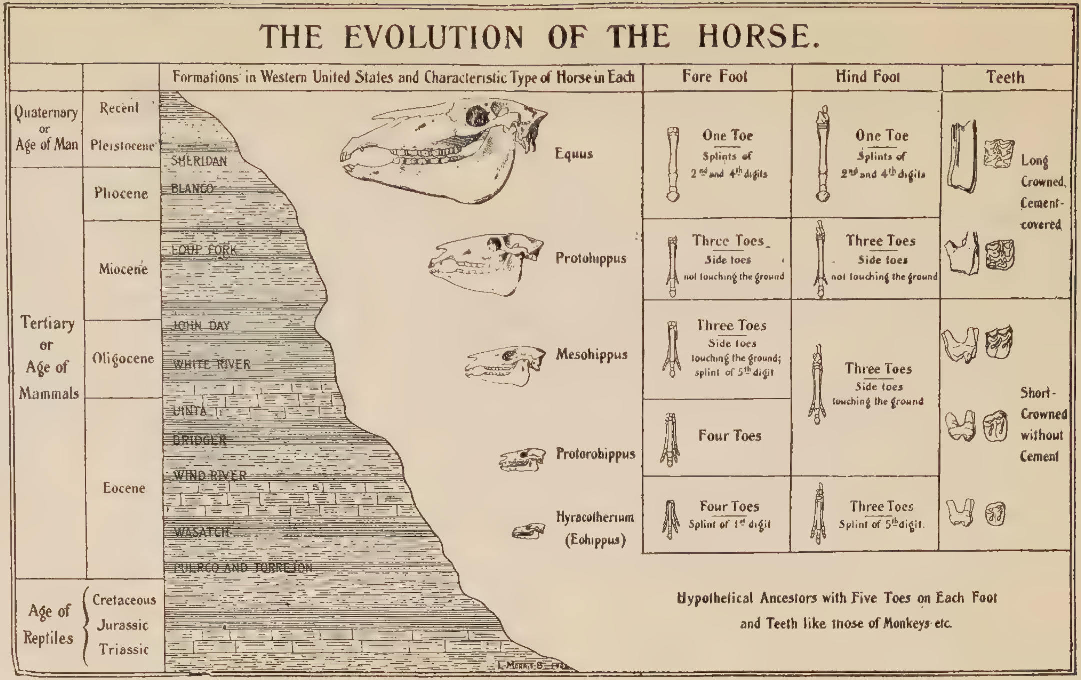
[4] *Scientific Monthly,* March, 1923, p. 246.


THE EVOLUTION OF THE HORSE.
Formations in Western United States and Characteristic Type of Horse in Each
Fore Foot
Hind Foot
Teeth
Quaternary or Age of Man
Recent
Pleistocene
Tertiary or Age of Mammals
Pliocene
Miocene
Oligocene
Eocene
Age of Reptiles
Cretaceous
Jurassic
Triassic
SHERIDAN
BLANCO
LOUP FORK
JOHN DAY
WHITE RIVER
UINTA
BRIDGER
WIND RIVER
WASATCH
PUERCO AND TORREJON
Equus
Protohippus
Mesohippus
Protorohippus
Hyracotherium (Eohippus)
One Toe
Splints of 2nd and 4th digits
Three Toes
Side toes not touching the ground
Three Toes
Side toes touching the ground; splint of 5th digit
Four Toes
Four Toes
Splint of 1st digit
One Toe
Splints of 2nd and 4th digits
Three Toes
Side toes not touching the ground
Three Toes
Side toes touching the ground
Three Toes
Splint of 5th digit.
Long Crowned, Cement-covered
Short-Crowned without Cement
Hypothetical Ancestors with Five Toes on Each Foot and Teeth like those of Monkeys etc.
L. Morris S. 1902

THIS IS SUPPOSED TO ILLUSTRATE THE EVOLUTION OF THE HORSE
From Guide Leaflet of American Museum of Natural History, New York

many thousands of years. But the horse seems to have been wholly unconscious of such a small matter as the difference of one digit in his toes. It must have taken the horse some thousands of years to awaken to the fact that his front feet were asleep. If the horse did not worry, why should the evolutionist? Moreover, Prof. H. F. Osborn has warned us against accepting appearances as proof of the correct order in existing creatures: surely, then, there is far more doubt about accepting appearances from fossils of extinct creatures when the fossils which go to make up this series have been picked up from different strata of rock here and there over the world. When we think of the general confusion of the order of the arrangement of the strata, how can we tell which is the oldest? We have already quoted from Dr. Noe's description of the finding of a fossil of a one-toed horse's foot in Utah which, according to the present classification of rock strata, is older than the four-toed fossils shown in the series. And Prof. A. Sedgwick says: "The genus Equus (horse) appears in the upper Siwalik beds, which have been ascribed to the Miocene age. . . . If Equus really existed in the Upper Miocene, it was antecedent to some of its supposed ancestors."[5] But even if it could be shown that the horse evolved from a creature of five toes to the present animal with one toe, it would prove a loss of digits in the toe. This would prove degeneracy in the history of the horse, not evolution.

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[5] *Students' Text-book of Zoology*, p. 599.

VII

SIMILARITY OF BLOOD

MANY have asserted that evolution can be proved by transfusing the blood of man into various animals, or that of one animal into another, and observing the reaction. If there is a harmonious mingling of the blood, it is supposed that there is a near relationship: if there is hostile reception of blood, a disturbance caused, resulting in the destruction of red blood corpuscles, then it is supposed that there is either no relationship or that it is very distant. Prof. W. B. Scott says that blood " comes as near to giving a definite demonstration of the theory of evolution as we are likely to find."[1]

When the results of blood transfusion are tabulated, however, nothing definite is proved, and classes of animals which were formerly thought to be closely related are indicated by these tests to be distantly related, and others which were thought to be very distantly related seem to bear a closer relationship. Professor Nuttall, of Cambridge, has made extensive experiments along this line. Dr. H. C. Morton has summed them up as follows: (1) " Among the animals tested were forty-nine reptiles, nineteen fishes, fourteen amphibians, seven crustaceons (*i. e.*, crabs, etc.), one monotreme (a very low Australian Mammal, *e. g.*, duckbill), and two lemurs—these last being related to the ape tribe.

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[1] *The Theory of Evolution.*

Yet all these were alike in giving no reaction at all! The lemur should certainly have revealed its difference from the crab! (2) Some of all the rest of the species tested gave some reaction, generally only slight. This should, if the qualitative tests are of any real value, mean that all the rest of the species tested have some degree of relationship, and all of them more relationship to man than has that relative of the ape, the lemur, which gave no reaction. . . . *If similarity of blood proves relationship,* we must believe that while man and the anthropoid are closely akin, carnivores, rodents, hoofed mammals, and the whales tribe are all in a measure related to one another, and are all more akin to man than that cousin of the apes, the lemur. These results at the very least are *peculiar.*"

Speaking of the quantitative tests, he says they disagree with the qualitative tests. He used "Anti-primate Sera," which causes more precipitate in closely-related blood. Of two tests, the result of the first was: "The ox and the sheep gave the same amount as the baboon, *viz.,* .004; while the whalebone whale, one species of baboon, the tiger, the African antelope, *and man,* all gave the same also, *viz.,* .003. Surely a *reductio ad absurdum* of the whole theory!"[2] Of the second test, "Even Prof. W. B. Scott has to admit: 'It could hardly be maintained that an ostrich and a parrot are more nearly allied than a wolf and a hyena, and yet that would be the inference from the blood tests."[3]

On this subject, Dr. Erich Wasmann says: "If anyone confuses these two ideas of skillful jugglery, the blood-relationship between man and the chimpanzee may indeed appear to be proved; but only to an uncritical public. The proof will be logically convincing only if it has been previously demonstrated that a similarity in the chemical reaction of two kinds of blood depends solely upon the existence of direct blood-relationship between the animals possessing this blood, and no one can maintain this to have been established. . . . According to Friedenthal's own experiments, the blood of . . . the common crab, or that of a lug-worm, did not destroy the red blood corpuscles of a sea-mew or a rat; but surely no one would infer that for this reason rats must be directly descended from lug-worms, or sea-mews from crabs." [4] In summarizing his discussion, Dr. Morton says: "Ultra-microscopical examination of human and all animal blood has revealed difference of structure in the red blood corpuscles. No doubt this matter will be pursued: and meantime all that these blood-reaction tests prove (*if indeed they prove anything*) is blood similarity: *and similarity does not involve relationship.* It amounts to just this: that the blood of certain Primates and other mammals share certain chemico-physiological properties. But chemical resemblance and identity of origin are quite distinct." [5]

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[2] Pp. 328, 329.

[3] *The Bankruptcy of Evolution,* pp. 186-190.

Dr. Arthur I. Brown, a surgeon of the first rank, in his booklet, *Evolution and the Blood-Precipitation Test,* has shown from the most recent medical investigations that the comparison of the blood of man with mammals proves merely chemical resemblance and furnishes no proof whatever of blood relationship. He says: "During the past year or two, and particularly during the past few months, the evidence derived from thousands ot highly technical experiments with the blood serum of man and different animals—most of these conducted several years ago—(in 1904 to be exact)—has been repeatedly proclaimed as the strongest proof yet discovered in support of the evolution theory."

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[4] *Modern Biology,* p. 458.
[5] P. 191.

He shows that the comparisons, reactions and precipitates are not made of the entire volume of the blood, but only of the *serum* of the blood—which is only a small proportion of the whole—when it is allowed to come in contact with, and react upon the blood of another. He shows that there are no two men whose blood is of the same chemical composition. He shows that the transfusion of the blood of some men into others will produce serious and even fatal results. He shows that the life of the blood is destroyed and the larger part of the chemical constituents are eliminated before the comparison is made of the serum which remains with the blood of the lower animals. He shows that these experiments are very delicate and at best are inexact: that the results in many cases do not agree and are very confusing. He shows that those who attempt to prove relationship between man and the lower animals suppress, eliminate or pervert some of the facts and base their conclusions upon imagination which is biased in favor of evolution.

Dr. Brown's whole booklet is most interesting and informative. Some of his statements are as follows: "Blood contains two definite and distinct parts, one solid, the other liquid. The solid portion is composed of small, round, protoplasmic masses called cells, red and white. . . . Protoplasm is the material basis of all living organisms. It is derived, naturally, from the medium which surrounds it, and the elements which compose the body framework must therefore be identical with those found in the earth's crust. The Biblical statement, then, that man was formed from the dust of the earth is verified by physiological investigations.

" Every living organism, without exception, contains the following elements which are found also in the ground beneath our feet: carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, chlorine, potassium, sodium, calcium, magnesium and iron. . . . We see, then, that the principal constituents of the blood cells are a large number of chemicals in complex combinations with one another, floating in a fluid medium. Human blood is made up of rather more than one-third to one-half its weight of corpuscles or cells. It contains from twenty per cent to twenty-five per cent solids. The liquid part of the blood is named plasma, and this, by clotting, is broken up into serum and a substance called ' fibrin.'

" Thus, we understand that blood consists of cells and plasma, the plasma made of serum and fibrinogen. It is necessary constantly to remember that what scientists are using in their so-called blood tests is nothing but serum—a small part of blood. . . . If the blood cells are taken out of the blood, we have withdrawn a most important group of chemicals, in the absence of which we are not testing *blood* at all.

" It is possible, moreover, that the cellular protoplasm—the most complex, baffling, and mysterious substance in the world—contains many other things about which we know nothing. These, of course, are necessarily absent from the test fluid.

" We *are sure*, however, that there is in the protoplasm of our bodies something of which we are in total ignorance, namely, the life-principle. Of the nature of life, its origin, its powers, its reproductive faculty, its ability to feed and sustain itself and the reason and manner of its departure from the cell, at the moment of death, we are in profound ignorance. An impenetrable wall meets our attempt to inquire into these abstruse problems. . . . Remember that when ‘ blood ’ tests are made, all the cells with their protoplasm and chemicals are removed; also, the *plasma is changed* by the formation of fibrin, the extraction of which leaves us only a liquid known as serum—a remarkable fluid, but vastly different from original blood, or even plasma. . . . This watery, altered, fluid residue—‘ serum ’—has really very little in common with the original blood. Certainly no individual could live for five minutes if it replaced the normal liquid in the vessels of the body. . . . Yet, notwithstanding this, we are asked to believe that the experimenters are dealing with human ‘ blood.’ ”

After speaking of the four groups of the blood of human beings, Dr. Brown says: “ In transfusion, if the wrong types are mixed, very serious and even fatal reactions may follow. These reactions, obviously, do not prove that either the donor or the patient is not a member of the Genus Homo, as should be the case if we interpret the result according to the principles adopted by the evolutionist.

“ The serum of the horse can be used with perfect safety on a human. This does not prove genetic relationship for the horse, nor on the other hand would incompatibility disprove it.

“ Professor Brumpt found that animals inoculated with the blood of men suffering from sleeping sickness, contracted the disease. The only exceptions were a few apes and pigs. Does this prove a close relationship between these two classes of animals and a separation between other animals and men? No such conclusions can be drawn. . . . All such inferences are absurd and Professor Rossle, one of the foremost investigators along this line, claims that the blood reaction does not indicate, *nor does it correspond to,* the relation existing between any two animals. The facts of comparative anatomy are often in opposition to the findings from the blood.

" Again, compare asses' milk and human milk. By adopting the evolutionary logic we could come to some ridiculous conclusions. The qualitative chemical analysis reveals the fact that of all mammals, the ass is the closer to man in this respect. We would not dare to insinuate, however, that the latter must class himself with this long-eared fraternity, nor, because horses' milk is nearest in composition to that of the ass, that we should arrange them in this genetic order from above downwards—*viz.,* man, ass, horse, cow."

Dr. Brown quotes from and answers Prof. H. H. Newman, zoologist of the University of Chicago, who gave extended testimony in favor of evolution at the Scopes trial. " His views may be taken to represent the most modern evolutionary view. In course of his lengthy statement, which covers all arguments for the theory, he gives considerable prominence to the evidence from blood." Prof. Newman admits: " There is, however, no exactness about this parallel; nor could we expect such to be the case; there is no exact parallelism between the teeth and the feet, between the head and the tail. No two systems of an organism exactly keep pace in their evolution; one may remain relatively conservative while the other may become greatly specialized. Of all systems, the blood seems to have been the most conservative and to have retained most fully its ancestral characters. It is on this account that blood tests are so valuable in revealing relationships that can scarcely be determined in any other way."

Notice that Prof. Newman says, " there is no exactness about this parallel." How, then, can it prove anything? He thinks that the blood has " retained most fully its ancestral characters." But if the parallel were more nearly exact than it is, it would not prove ancestral relationship. One might as well suppose that because all trees contain sap, and this is of a watery nature in various kinds of trees and plants, and has much the same appearance and contains similar chemical ingredients, therefore all trees and plants have a common origin in some early ancestral form. Or one might as well say that because all automobiles contain air valves in the tubes which are identical, and since these are just like the valves in bicycles, therefore we may conclude that all bicycles, Fords, Overlands, Franklins, and Pierce Arrows have had a common origin, presumably in some more remote type called a wheel-barrow. How shall the evolutionist who traces his ancestors back through the fish account for the radical change in the blood from cold to warm-blooded creatures?

Concerning Prof. Newman's testimony, Dr. Brown says: " Notice, then, that ' human blood is drawn ' into a vessel, ' and allowed to clot.' This operation, as we have learned, extracts all the solid materials and leaves behind only the fluid portion. But the learned professor goes on to say,—and for all we can tell he is quite serious—' The latter watery fluid contains the specific human blood ingredients.'

" He must know that this is far from the truth. Think what has been done. The blood cells have all been killed and removed, carrying with them the all-important life principle, and most of all the chemical constituents of blood.

" Also the process of clotting has caused the appearance of ' platelets ' and new chemicals in different combinations. Yet, notwithstanding this, we are asked to believe that the experimenters are dealing with human ' blood.' . . . When this ' serum ' is injected into rabbits, horses, apes, monkeys, man, etc., the operation is nothing more than the transference of a solution of certain salts, chiefly table salt, in water. It has a faint resemblance to blood, but is now a poison, or toxin, or ' antigen,' of which there are many."

Of the disease " Hæmophilia," which is marked by a diminished clotting power of the blood, Dr. Brown says concerning the treatment: " The blood serum of rabbits may be injected, with very favorable and curative results, into the human patient, but ox-serum causes severe and dangerous symptoms. What is the significance, if any, of this peculiar fact? The rabbit belongs to the family of rodents. . . . And yet, strange to say, the blood serum of the ox, which, according to the theory, is much nearer to man than the rabbit, is poison to man, while the serum of the rabbit, a million or more years removed from man,—again according to the theory—is entirely compatible with human serum and shows a much more marked resemblance in chemical composition.

Dr. Brown states that the experiments of Prof. George Nuttall, of Cambridge University, were performed twenty-one years ago and have not been repeated since by him or anyone else, and that these experiments are the basis of practically all the comments by evolutionists. They are not therefore in any sense recent. After showing the discrepancies in Dr. Nuttall's tabulated results, and the differences between the results of the qualitative and quantitative tests, some of which we have already noted as summarized by Dr. Morton; and after referring to Dr. Nuttall's own statement concerning the " crudity " of his methods and the many " sources of error," Dr. Brown concludes: " Under such circumstances as these, it would seem to require only a very ordinary degree of intelligence to reject any conclusions whatever as to blood kinship, derived from these operations.

" Think of the question in this way. These blood cells are living individuals, breathing, feeding, excreting and moving, almost the same as any other living organisms. They live and reproduce in a liquid environment which surrounds them and supplies them with the necessities of life, air, water and food. Humans do the same, except that our environment is not fluid and we adopt different means of securing these three essentials to life.

" What has the experimenter done? He kills these little cellular individuals, and then proceeds to examine their environment, the watery liquid with its complex quota of chemical substances upon which the minute creatures depend for their existence.

" From investigations which are very difficult, uncertain and tricky, he proposes to decide the relationship between the many dead owners of the blood, which in life contained the same basic elements in varied combinations.

" Could we not, just as logically, apply the same principle in a slightly modified form? With equal promise of accurate results we might exterminate a collection of representatives of Genus Homo. . . .

Also, some salt water fish, a number of fresh water fish, kangaroos from Australia, and hippopotami from Africa, rhinoceroses from India, camels from Central Asia, and llamas from South America? Having extinguished the life of these animals, we proceed to investigate their environment, the atmosphere they have breathed, the liquids they have absorbed and the essential foods they have consumed.

" After very careful analysis, we prepare a number of tables supposed to give the exact genetic relationship between the dead animals and man. . . . Who can deny that our tabulated results would have as much claim to accuracy and dependability as those of Nuttall, ' et al.'? "

He says further: " It would seem the most sensible and natural thing in the world for an omniscient and omnipotent Creator and Designer to provide a similar circulating, nourishing, fluid medium to flow through the vessels of all animal bodies. . . . The blood is only one of many body tissues like bones, muscles and organs, and a similarity in blood composition between man and lower animals, even if much more marked than it actually is, would have little or no bearing as evidence of community of origin, or of an evolutionary process connecting man with inferior life-forms. . . . A logical, intensive and critical examination of all the evidence affords no justification for interpreting resemblances of homology—of which this blood similarity is one—as surviving vestiges of an ancient ' common-ancestral ' type."

VIII

VESTIGIAL ORGANS

THE opinion has been held by many scientists that there are a number of structures or organs in the human body which perform no function, that they are merely left over from former ancestors among the lower animals in which they were useful. Of the argument for evolution from these rudimentary organs, Huxley said: " There is probably none which has produced a greater effect in promoting the general acceptance of the theory of evolution." Robert E. E. Wiedersheim, professor of anatomy in the University of Freiburg, who, at the time of his death in 1923, was said to be Germany's greatest authority on comparative anatomy, said that there are one hundred and eighty vestigial structures in the human body. Thus man would be a veritable patchwork of leftovers from the lower animals.

One of the organs which Wiedersheim thought was vestigial is the *pineal body* or gland. It is a little organ about the size of a grain of wheat located in the roof of the third ventricle of the brain. It was thought to be the rudiment of a third eye such as is found in certain lizards.

Swale Vincent, professor of physiology of the University of London, in his book entitled *Internal Secretion and the Ductless Glands* (1922), shows that the pineal gland is a very important organ in the human body. It has an important part in regulating the growth of the body, and particularly of sexual development. When diseased, it causes premature ossification of the bones. It seems to control the inflow and outflow of the cerebro-spinal fluid of the third ventricle.[1]

There are many who have held, as did Darwin, that the *vermiform appendix* is a useless or even dangerous rudiment, an undeveloped cecum which is much larger in many of the lower animals. Prof. Howard A. Kelly, of Johns Hopkins University, shows that it is a valuable organ whose secretion helps to lubricate the intestines. " It increases the extent of the intestinal mucous surface for secretion and absorption." [2]

Some years ago *thyroid glands* were supposed to be useless vestigial organs. They are located on either side of the windpipe just below the larynx. There is no doubt about their importance today. They perform an essential function in the human body. Vincent says that in the dog and cat, complete removal is fatal. " Defective thyroid function in the mother is the essential factor in the production of cretinism." [3] Dr. C. W. Saleeby says of the thyroid that it " creates a unique substance, mostly consisting of iodine. Without it, none can live. Without enough of it in the blood of an expectant mother, not only is she imperiled, but her baby cannot be born normal. The thyroid gland, if starved of iodine, tries to make bricks without straw, enlarges, and nearly dies in consequence. We call that result goitre. . . . The right course is for us to restore the missing iodine to our own food, that our thyroids can live and work for us as they should. . . . This will undoubtedly save a vast amount of ugliness, idiocy, deaf mutism, and, possibly, cancer." In order to aid in the prevention of goitre the State of Michigan has declared it illegal to sell salt which has not been iodized.

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[1] Pp. 385-393.

[2] *Vermiform Appendix,* p. 78.

[3] *Op. cit.,* p. 284.

The *thymus* is another organ which until recently was classed as vestigial. It is a small organ located under the breastbone in front of the heart. It is well developed in the infant, but wastes away in a few years. It is known to perform an important function in hens, because when it is removed, they lay eggs without shells. It has been seriously urged that our ancestors who lived in the water could not have produced egg-shells, and their young would have perished if they had not possessed a thymus. It is now known, however, that the thymus has an influence upon the growth of the bones and that it may be a temporary substitute for the lymphatic vessels. Ernest H. Starling, professor of physiology in the University College, London, says: "In certain cases of arrested development or of general weakness in young people, the thymus has been found to be persistent."[4]

Of the *pituitary body,* Vincent says: "For a long time the pituitary body was looked upon as a 'vestigial relic' and of no importance in the animal economy." It is located at the base of the brain and is about the size of a small marble. "It was established by Paulesco, in 1906, that the organ is essential for life." When it is removed from animals, the operation is fatal, though the duration of the life of the animal varies. Its removal causes disturbances in the growth. It helps to regulate secretions from various glands of the body. If it does not function properly it may cause what is called "giantism" or overgrowth, or it may cause "infantilism" or small and defective growth. Vincent shows photographs of men and women greatly deformed due to the improper functioning of the pituitary body.[5]

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[4] *Physiology,* Third Edition, 1920, p. 1245.

Until about three years ago, professors of physiology taught their pupils that a part of the tissue in the pancreas composed of little projections about the size of a pin-head and known as the *Islands of Langerhans,* was useless tissue, a vestigial structure left over from the lower animals. Since the discovery of Banting and MacLeod, of Toronto, it is known that this insular tissue plays an important part in the regulation of sugar in the blood and thus in the prevention of diabetes. An insulin is now prepared, derived from the pancreas of animals, for the cure of diabetes. E. C. Dodds, professor of bio-chemistry in the University of London, and F. Dickens, of the Bland-Sutton Institute of Pathology, and Swale Vincent, working under improved and more favorable conditions, report the results of their work in a book issued this year. They say: "The result of this investigation was to provide further evidence that, as MacLeod states, the source of insulin is, in fact, the islet tissue."[6] The Islands of Langerhans, then, in place of being useless relics, are essential to the health and life of man.

Many of the exponents of evolution have something to say about human tails. They tell of the finding of such remnants in a few cases and assert that the coccyx in man is the remnant of a tail which man possessed when he belonged to the simian family or to some family distantly related to the monkeys. W. W. Keen reasoned in this way in his recent book, *I Believe in God and in Evolution*. He still holds to the theory, although recently he tells us plainly that the picture which he showed to prove it was a fake. In an article in *Science*,[7] Mr. Keen says: " The correction I wish to make is as follows: In my book, *I Believe in God and in Evolution*, I have included in the fourth edition a photograph of an Igorot with a tail, which I vouched for as I understood that it had been photographed by my own grandson, Mr. John Freeman.

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[5] *Op. cit.,* pp. 264, 265.

[6] *The Chemical and Physiological Properties of the Internal Secretions,* by Dodds and Dickens, 1925, p. 53.

" A few days ago, within a few hours of each other, I received letters from Dr. Ales Hrdlicka, of the division of anthropology of the National Museum of the Smithsonian Institution, and Mrs. Ella F. Grove, who a year ago had been doing work in the Philippines for the National Research Council. Both of these correspondents stated that the Bureau of Science of Manila had shown the original of this photograph which showed that it was a fake photograph, the tail having been added to the original by a photographer, I suppose as a joke.

" On communicating with my grandson I find that he did not photograph this Igorot.

" My argument that human tails (of which I have shown that there are many undoubted instances) prove our animal ancestry is not in the least disproved by my having unfortunately used a photograph which further investigation has shown to be a fraud, for there are plenty of genuine tails.

" My whole object is to state the truth, and when any statement I have made is proved to be wrong, I wish to be the very first to disclose the errors."

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[7] April 2, 1926, p. 360.

It is a credit to Mr. Keen that he has made this correction. It shows, however, that the " assured results of science " are often not assured. Even if other instances upon which Mr. Keen relies are genuine it does not prove, or tend to prove, the animal ancestry of man. It is simply an abnormality such as six fingers and proves nothing concerning ancestry. These so-called human tails are at best merely a bit of protruding flesh an inch or a few inches in length.

The insuperable difference between man and the lower animals is not a difference of bodily form, although that is sufficient to prove that man is distinct species, but it is the fact that man possesses an immortal soul which was given to him not by a process of evolution but by a distinct act of the Creator.

The spleen, the tonsils, the semilunar fold or third eye lid, the coccyx, the muscles of the ear and of the scalp all have their function, though they may vary in importance. *One would think that men would learn that ignorance of the functions of any organs of the body affords no basis for declaring that they have none or that they are vestiges of the lower animals.* Many a man would have displayed more common sense and have saved his reputation if he had heeded the warning of Huxley when he said: " The recent discovery of the important part played by the thyroid gland should be a warning to all speculators about useless organs." There are probably some things in embryology and comparative anatomy that man may never be able to explain, but this simply shows the limitations of man's understanding and does not prove, or form a link in the proof of evolution. Mendel's theories may change, but his facts will stand, and it has been demonstrated beyond doubt that we can only get out of a species that which is in the individuals which compose it. Nothing can come from any family of animals but creatures of their own kind.

It is evident that houses must have some things in common. They have a foundation, a framework, rooms, doors, floors and roofs. A cottage is very different from a palace, yet many things may be enumerated which resemble each other. So it is natural that there are similarities between different kinds of animals and between man and the lower animals. Is it not evident that the developing embryo must grow in some definite manner from a simple germ? Is it not evident also that with thousands of animals in the world there must be a considerable resemblance in the embryonic stage as well as in the adult stage? Is it not evident that in the adult stage every larger land animal must have bones and joints and muscles and blood vessels and nerves and a brain, and that these must function to some degree alike? Is it not evident that, in order to have a variety of animals in the world, some must resemble man more than others, and that some must have a keener brain action than others? That some must be larger, some smaller, some more upright, some with different shaped limbs, and some with different shaped heads? Consequently, some must resemble men more than others.

If there is any relation between man and the simian family (gorilla, gibbon, etc.), as formerly held, or if there is any relation between man and some extinct family of animals, as some now hold, then that relationship must be one of degeneracy rather than ascent, the lower animals descending from man, rather than man ascending from the lower animals, because the only known kind of mutations or changes of structure are by loss, therefore the weight of the evidence is toward degeneracy rather than evolution. If evolution could be proved in some other way, there might be supplementary evidence in the similarity of embryonic and adult forms of life. But even if all embryonic animals were so alike that the human eye could not distinguish the one from the other, and if all animals were organ for organ, bone for bone, muscle for muscle, almost alike except the exterior flesh and skin to give them the present appearance; but if with all this the chasm between the species remains unbridged, and the other reasons in the way of accepting evolution remain, we would be no nearer the proof of evolution than we are with the striking diversity of forms which we have today. Man is the crowning work of the Creator, and we would be wiser as well as more reverent if we would believe with the Psalmist: " Thine eyes did see my substance, yet being unperfect; and in thy book all my members were written, which in continuance were fashioned, when as yet there was none of them."[8] " God set the members every one of them (appendix, coccyx, third eyelid, etc.) in the body, as it hath pleased Him."[9]

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[8] Ps. 139: 16.
[9] 1 Cor. 12: 18

IX

HUMAN FOSSILS AND PSEUDO-HUMAN FOSSILS

WE now come to one of the most vital points of the theory of evolution. We wish to investigate the history and the appearance of the most important fossils which have been called " missing links " between the lower animals and man. A fossil of man may consist of one bone, several bones, or of a complete skeleton. Prof. H. F. Osborn regarded a single tooth, which he found in Nebraska, as sufficient fossil evidence to declare that he had found another missing link. Prof. Eliot Smith, of London University, drew a reconstruction of this ancient ancestor and his wife, which was published in *The Illustrated London News* (June 24, 1922), showing in a realistic manner both Mr. and Mrs. *Hesperopithecus.* Of course, the general public would see this, and be greatly impressed with it, while only a few would see the statement in *Nature* (June, 1922), by Dr. Smith Woodward, of the British Museum of Natural History, in which he said that he believed the tooth was that of a Pliocene *bear.* Two people from one bear's tooth! Can you beat it? It should have appeared in *Punch.*

Such pseudo-scientific representations should serve as a warning to students who read such books as *Men of the Old Stone Age* (1916), by Prof. H. F. Osborn, or *The Antiquity of Man* (1920), by Prof. Arthur Keith, or *The Evolution and Progress of Mankind*

(1923), by Hermann Klaatsch, and who look at the pictures of the supposed reconstructions of semi-human beings which are said to be our ancestors. These reconstructions are made sometimes from one bone, usually from only a few bones, which, when found, were broken into several pieces. Often even experts differ as to whether certain of these fossils belong to an ape or a man. In some cases the bones are so scattered that it is impossible to determine whether they originally belonged to one or several individuals. In other cases, the peculiar shape of the bones is probably due to the fact that they originally belonged to an abnormal individual. There are also reconstructions which are declared by some anthropologists to be based upon bones some of which were of human, others of simian, origin.

Let us consider the most important fossils which are alleged to be human.

PITHECANTHROPUS ERECTUS

Allow me to introduce to you one who is alleged to be one of our oldest ancestors. If his age is calculated correctly (by Keith), he is about 500,000 years old. Do not be alarmed at his name, he did not choose it himself, it was selected by some of his much younger relatives. His full name is *Pithecanthropus Erectus*, but his everyday name is just plain *Pithecanthropus*. You see, his name is partly Greek and partly Latin, and the Latin is mixed with the Greek. If we should call him plainly, *Ape-Man*, as his name means, his presence would not have such a hypnotizing effect. His full name would be, if fully translated, Greek-Roman, Erect-Ape-Man. But that would never do, because he is possibly our most ancient, and one of our most revered ancestors. Deperet called Haeckel's imagined ancestors " visions of the mind," and many such visions of the mind, though not so reprehensible as Haeckel's, have paraded with dignity under a large scientific name. Let it be remembered that designating this peculiar personage Pithecanthropus does not make him an Ape-Man, any more than calling a Negro girl Lily, makes her white.

Now that we have been introduced to Pithecanthropus what have we met? His whole being consists of four bones: the cap of a skull, two teeth, and a femur. Two of these bones were found in 1891 by Dr. Eugene Dubois, a Dutch army officer, near Trinil, in Central Java. His work of excavation was conducted in an old river bed, and when the wet season came on he was forced to suspend operations. The next year he found two more bones, the left thigh bone and another molar tooth. The teeth were about five feet distant from the skull, and the femur about fifty feet away. In this same locality fossil bones of animals had been found previously, and others have been found later. Dubois thought the stratum in which these bones were found to be at least as old as the Pliocene epoch. Others have classified it as still older. Dr. Dubois reconstructed the skull on the basis of a gibbon (an arboreal ape of the genus Hylobates), and estimated its cranial capacity as about 900 cubic centimeters. This would be below the size of the normal brain. The average human brain occupies the space of about 1,480 cubic centimeters. Some human pygmies have a cranial capacity of about 960 cubic centimeters. Some have considered this skull to be that of an idiot, others that of an ape-man, and others that of a giant ape or Hylobates. The famous anthropologists at Leyden, in 1895, were unable to agree. Five said that Pithecanthropus was an ape, seven a man, and seven an intermediate form between man and the apes.

It is impossible to prove anything from these fossils concerning the ancestors of man. (1) The age of the stratum in which these remains were found cannot be determined. Even if the geological uniformity theory were true, it is well known that a river bed is constantly changing, and particularly in a curve of a river, as in this case. The bones may have been buried in modern times. (2) The bones were so scattered—over an area of fifty feet—that there is no certainty that they belong to a single creature. (3) The large sized skull-cap, which indicates a larger cranial capacity than that of the average ape, may be easily accounted for, as it is by Richard Hertwig, who supposes that it was " an anthropoid ape of extraordinary size." (4) Leading anthropologists have declared that these fossils could not be in the direct line of human descent. Dr. Rudolf Virchow, who was president of the Anthropological Society of Berlin for thirty years, an osteologist and especially a craniologist, criticized the report of Dr. Dubois when he first presented these fossils at Leyden, before the International Congress of Zoologists, in 1895. He said that it could not be determined whether they were the remains of man or ape, or whether all the bones belonged to the same individual. After a careful examination of the bones, he said that the skull was that of a large gibbon; that the teeth were more like an ape than a man, and that the femur would pass for that of a gibbon. Another who compared hundreds of human femurs with that of Pithecanthropus, found only two of a somewhat similar shape, while he found this to be the normal shape of the thigh bone of the gibbon.

The craniologist Macnamara, after examining these remains, said: " The cranium of an average adult male chimpanzee and the Java cranium are so closely related that I believe them to belong to the same family of animals—*i. e.,* to the true apes."[1] This opinion is shared by a number of anthropologists, as Klaatsch, Branca, Schwalbe, and Hubrecht.

Dr. Dubois was sharply called to account by Dr. W. H. Ballou, in *The North American Review,*[2] because he sealed up the remains of Pithecanthropus and refused others the privilege of seeing them. Seemingly as the result of such pressure, he has permitted a few anthropologists to examine them.[3] But, strange to say, Dubois himself now believes that his much-prized fossils are bones of a large ape, rather than a form of ape-man. Dr. Ballou makes a further statement which is very disconcerting concerning the discoveries of Dr. Dubois: " Recently he announced that simultaneously, forty years ago, he secured skeletons of a race of men in Java, existing about two hundred and fifty thousand years ago, probable descendants of Pithecanthropus of five hundred thousand years ago. The skulls of both sexes he describes as much larger than those of any known race. But why this late announcement? "[4] If Dr. Dubois had reported all of his discoveries at the time, and scientists had made a common-sense interpretation of them, they would have simply pronounced the skull of Pithecanthropus that of an ape, as they have been forced to do since, and have noted from the large skulls the degeneracy of the race rather than the evolution. This would have saved volumes of skeptical arguments, and would have corroborated the Scripture record.

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[1] *Archiv. für Anthropologie,* XXVIII, 1903, pp. 349-360.

[2] April, 1922, p. 547.

[3] *Science,* August 17, 1923, Suppl. VIII.

[4] *Op. cit.,* p. 547.

HOMO HEIDELBERGENSIS

All that is meant by this imposing title is, The Man of Heidelberg, and the reason the fossil is called *The Heidelberg Man,* is because a professor of the University of Heidelberg first made a scientific examination of it. And all there is to the Heidelberg Man is a broken jaw which contained some teeth. This fossil was found in 1907 near Mauer, Germany. It was broken in two by the shovel of a workman who was engaged in excavating in a quarry. It was discovered at a depth of about seventy-nine feet below the surface in a stratum which is classified as Middle Pleistocene. Four of the teeth which were broken by the shovel of the workman were not found. Fossil bones of the ancient elephant and rhinoceros were said to have been found in the same stratum. There were also some fragments of sharp stones, called eoliths, which are supposed to have been used by human beings.

The huge size of the jaw and the normal size of the teeth led Prof. Dwight, of Harvard, to call it " Either an anomaly or the jaw of some aberrant species of ape." Kramberger declared that with the exception of the recessive chin, it was like that of the modern Eskimo skull. If the fossil is abnormal, as it apparently is, what can any person determine about the reconstruction of the skull or body? Do we not all know people who have large jaws and recessive chins? Could not anyone pick out individuals whose lower jaws, if isolated from the rest of the body, would puzzle any anthropologist in the matter of reconstruction? It is absurd to try to prove anything about human ancestry from a single, abnormal, broken jaw.

EOANTHROPUS DAWSONI

Eoanthropus means *dawn man,* and the title, Dawsoni, is given because of the man who made the discovery, Charles Dawson. The whole of this man consists of part of a skull and part of a jawbone, which were found in 1912-13, at Piltdown, Sussex, England. It is often called *The Piltdown Skull.* With possibly the exception of the Heidelberg Jaw, this is supposed to be the oldest specimen found in Europe. Dawson first found a portion of a parietal bone, and after about six months he found other portions of the skull. These were found several yards distant from the place where he found the first bone. Later, a canine tooth was found near the same place. The geological epoch of the Piltdown gravel is said to be Pleistocene. Dr. Smith Woodward, who reconstructed the skull, said: "The human remains comprise the greater part of a brain-case, and one ramus of the mandible, with two lower molars."

Dr. Woodward did not seem fully satisfied with his own reconstruction, for he said that while the skull appeared human, "the mandible (jaw) appears to be almost precisely that of an ape, with nothing human except the molar teeth."[5]

Certainly nothing can be proved as to the antiquity of man from these fossils. (1) The parts were not all found in the same place. Even the parts of the skull were not all found together. The pieces were separated by a distance of several yards. (2) The parts were not all found at one time. Several months intervened between the discovery of the parts. The gravel had been washed with the rain and disturbed by workmen who had been digging in it. (3) The skull and the jaw are apparently misfits. The skull, according to Keith, is that of a woman. (Too bad, at least if she was a spinster, that she has to bear a man's name!) The jaw, according to Dr. Hrdlicka, is that of an ape.[6] Prof. Keith says that Woodward, in the reconstruction, had difficulty in securing "an approach to symmetry and a correct adjustment of parts."[7] Prof. J. H. McGregor, of Columbia, said that he did not believe the jaw and skull belonged to the same individual, and Prof. D. Waterston expressed the same opinion when addressing the London Geographical Society. The cranial capacity of the skull is very little less than that of the average woman. The forehead is as upright as that of the modern man. With all this in view, how can there be any proof from this specimen of the origin or antiquity of man?

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[5] From *Smithsonian Institution Report,* 1913, pp. 505, 506.

HOMO NEANDERTHALENSIS OR HOMO PRIMIGENIUS

This is commonly called the *Neanderthal Man*. The remains were given this name because they were found in a cave at the entrance of the Neanderthal gorge near Hochdal, Germany. The first fossils were found in 1856, in a small cave near the Dussel River, and about sixty feet above the lower part of the valley. There was a skull cap, parts of upper and lower limbs, five pieces of rib, and a part of the pelvic bone recovered.

These remains have been regarded as important because it was said they were found in the Alluvial loam

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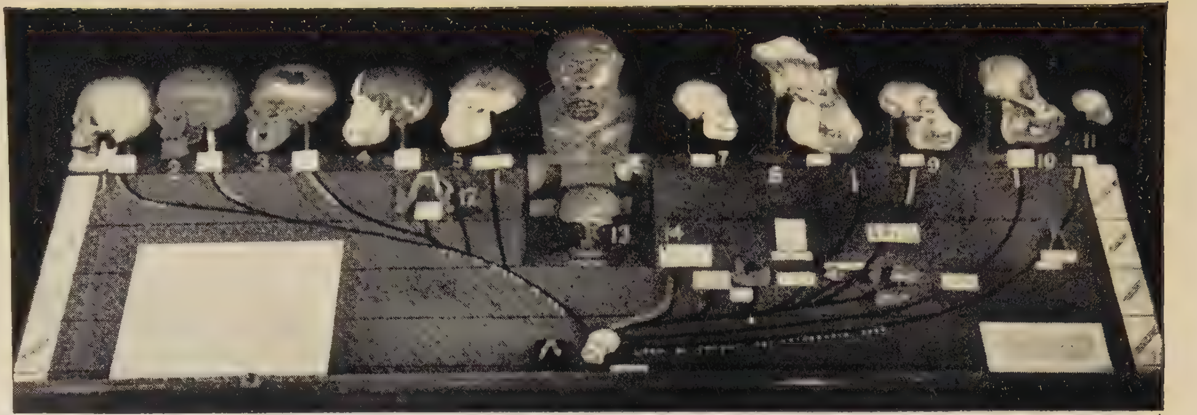
[6] *Science*, May 4, 1923, Suppl. X.

[7] *The Antiquity of Man*, p. 364.



THIS EXHIBIT IS FOUND IN THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK CITY. IT INDICATES FROM WHAT SMALL FRAGMENTS, AS SEEN IN THE FOREGROUND, RECONSTRUCTIONS ARE OFTEN MADE

which was said to be formed about the time of the early mammals. But it is impossible to determine anything definitely concerning their age. (1) The bones and the loam were thrown out of the cave by workmen into the ravine below several weeks before any scientist arrived. (2) According to a diagram of the cave shown by Keith[8] and the description of the cave, it opens by a crevice above, consequently both the earth and the bones might have been washed in from above. The bones might have been buried in the cave by friends. Certainty in the matter is impossible.

After a thorough study of the bones, Rudolf Virchow said they were "pathologically much altered: that there were traces of rickets and gout, that the Neanderthal man could not possibly have belonged to a primitive savage race."[9] At a scientific congress held at Bonn, in 1857, "The German Professor Mayer scornfully retorted against Huxley, that they were the bones of a Mongolian cossack of Chernicheff's army corps of the year 1814. Others thought they were an idiot or a savage who had wandered into Europe, and so on."[10]

Some estimate the cranial capacity of the Neanderthal man as about 1,236 cubic centimeters, which is almost the same as that of the average woman of Europe at the present time. Huxley said: "In no sense can the Neanderthal bones be regarded as the remains of a human being intermediate between men and the apes."

There are *other specimens* which are classed with the Neanderthal man. They are said to be of the *Nean-*

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[8] *Antiquity of Man,* p. 128.

[9] *The Evolution and Progress of Mankind,* by Klaatsch, enlarged by Heilborn, p. 19.

[10] Klaatsch, *op. cit.,* p. 251.

derthal type. Keith said: " The skull found at Gibraltar in 1848 was the very first recorded discovery of the remains of the Neanderthal man." [11]

Two nearly complete skeletons which seem to be the remains of a man and woman, were discovered, in 1886, at Spy, Namur, Belgium. They are commonly known as *The Men of Spy.* They were found at a depth of about fifteen feet from the surface of the terrace. Bones of the mammoth and woolly rhinoceros were found at the same place. The skulls of both were badly broken. From the position in which they were found, they had apparently been buried by friends.

Others of the Neanderthal type were found at *Krapina,* in Croatia, in the year 1899. There were fragments of bones which showed traces of fire. Human bones had been split open while they were fresh—probably at cannibal feasts—and had come in contact with fire. There was not a single whole skull. The other bones were in fragments. Some of these bones are thought to belong to the Neanderthal type. Some did not fit the theory.[12]

From these and a few other specimens which have been classed as Neanderthal men, Prof. Schwalbe, of Strassburg, declared that they constituted a distinct human species. He called this species *Homo primigenius,* to distinguish it from *Homo sapiens,* or modern man. Prof. Arthur Keith has adopted the same view. But note Keith's own words and decide what basis he had for such a decision. " The Spy men were typical representatives of the Neanderthal species, with large, robust skulls, holding brains which, in point of size, were above the average of the modern European." Of

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[11] *Op. cit.,* p. 122.

[12] Klaatsch, *op. cit.,* p. 252.

Professor King's statement to the effect that the Neanderthal man resembled a chimpanzee, he says: " Professor King did not know, however, what we are now well aware of, that Neanderthal man had a large and complex human brain, that he was a skilful artisan, that he buried his dead and had certain beliefs regarding death. . . . Men of the modern type, just as highly evolved in structure of bone and brain as men are now, must have been in existence when Neanderthal man was still living. . . . In size of brain, Neanderthal man was not a low form. His skill as a flint artisan shows that his abilities were not of a low order. He had fire at his command, he buried his dead, he had a distinctive and highly evolved form of culture—Neanderthal man was certainly not a dawn form of humanity."[13] He admits that the brain of these ancient men was larger than that of the average modern European; that they had a high form of culture, and that they had certain beliefs regarding death. What proof, then, is there of a different species? May not all these things be affirmed of modern tribes or nations? Men bury their dead, and the place where their remains are found is no proof of their age or associates. There are just as primitive peoples today as ever lived in what is called the stone age.

In the more recent discoveries as in the case of the *Rhodesian Man,* found in Rhodesia, in 1921, in a cave of the Broken Hill Mine, and the *Foxhall Man*—which was not a man, but merely some flint instruments—found near Foxhall, on the east coast of England in the same year, there is nothing distinctively new. Of the Rhodesian man it is said: " The skull is in some features the most primitive one that has ever been found; at the same time it has many points of resemblance to (or even identity with) that of modern man. . . . At least one prominent authority thinks that this man had quite as much gray matter as the average modern man." [14]

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[13] *The Antiquity of Man,* pp. 127, 131, 159.

THE NEW MISSING LINK

This is the title of an article in *The British Medical Journal*,[15] which says that the discovery of a missing link by Prof. Raymond Dart, in South Africa, "has fallen like a bombshell on anthropological Europe." It came from a limestone quarry situated at Tuangs, eighty miles north of Kimberley. "The quarrymen had worked their way two hundred feet into a limestone bluff which rises fifty feet above the dry veldt of the surrounding country. The monkey's skull was blasted from the rock." The blasting had shivered and destroyed most of the cranial bones. "His reconstruction he calls Australopithecus africanus. It has some features of a chimpanzee, others of the gorilla, and some belong to neither. Of humanity there is no trace, except that its jaws are not just that of a chimpanzee. It is that of an anthropoid ape." Its brain is similar to that of a gorilla except that it is longer-brained." It belongs to the fossils of the baboon type." What proof, then, has the discoverer that it is a "missing link"? The writer of this article admits that "Earth pressure may compress a skull from side to side and thus alter the natural shape of the brain cavity." The only reason for not calling it an anthropoid ape is that the head is a trifle longer than the usual type. May not "earth pressure" account for this? There is not the slightest reason for supposing that it was related to man.

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[14] *Science*, Feb. 3, 1922, pp. 129, 130.

[15] February 14, 1925.

When, a few years ago, some men of an investigating expedition saw the complete carcass of a Siberian mammoth, it was discovered that former restorations of this animal had been fanciful and incorrect.[16] This is simply one illustration which shows that it is impossible for scientists to be certain of the accuracy of restorations which they may make when they have only a few bones of an animal as a guide. No doubt many attempted restorations of men would be extremely amusing if we only knew the exact form of the man or the ape as he appeared in life.

In a home for the care of imbeciles, you may see all sorts of most peculiarly shaped skulls, and undersized and abnormal bodies. In ancient times, when there were no eleemosynary institutions to care for such people, would they not be the most likely to wander away to the shelter of some cave, to live there in the crudest manner, perhaps among animals, and to die there? Is it any wonder that the anthropologist is puzzled when he tries to restore such creatures along normal lines?

Or, perhaps the skulls of some men whose fossils have been found have been forcibly distorted in the course of their growth, as in the case of some of the "flathead" Indians in British Columbia. The pictures of the distorted heads of the Chinook Indians, of the neighborhood of the Columbia River, as found in textbooks on physiology, show a flatter, more peculiarly shaped skull than any portrayals which the writer has seen of human fossils.

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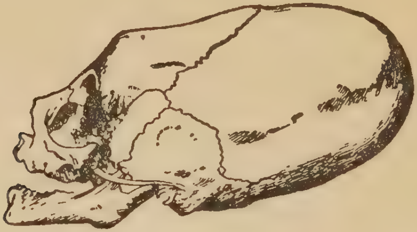
[16] *Smithsonian Institution Report,* 1906, pp. 321, 322.

Sir William Dawson said: "It is well known that any skull, ancient or modern, except those that have been artificially flattened, may find its counterpart in a large collection of European skulls."[17]



Flathead Indian skull. From the neighborhood of the Columbia River. Distorted by tight bandaging. Tribes in Africa of the Ituri Province, Belgian Congo bind their heads to make them cone-shaped. Some of these are more distorted than any of the fossil skulls, said to be "Missing links."

The fact that a human fossil may be found deeply buried in the earth does not prove that that individual lived in prehistoric times. It has always been the custom of men to bury their dead, and such remains have often been buried in caves and by the side of a river. Many have been buried deeply in order that they might not be disturbed by accident or by enemies. Dr. O'Toole tells of a man in Hawaii who directed in his will that he should be buried to a depth of eighty feet. He did this in order that no plow or other instrument might disturb his bones. Occasionally, no doubt, men have been caught and buried in caves, as was Floyd Collins last year in Kentucky. Bones have often been thrown into wells or other excavations, and afterward covered over. Moreover, even in historic times, not only a few fossils, but whole cities, have been covered over deeply with earth, debris, gravel and rocks, so that archæologists have had to dig down deeply into the earth in order to discover them.

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[17] *Fossil Men and Their Modern Representatives,* p. 178.

At the classic station of Solutre, near Macon, France, there have been found many important discoveries of human fossils from 1867 to the past year. At Solutre there are said to have been found relics of three periods of the Upper Paleolithic age; the Aurignacian, Solutrean, and Magdalenian. In the summer of 1924 a group of archæologists discovered a number of human skeletons, or portions of skeletons. With some of these there were found bones of the horse and the reindeer and paleolithic flints. This would indicate that these ancient remains belonged to the stone age. But along with the skeleton of a child about six years old, " in uncovering the skeleton, a bronze buckle was found near the head of the left femur. Judging from the style and workmanship of this buckle, the burial probably dates from about 300 to 400 A. D." [18] This discovery makes evident three things: first, that the stone age is not an extremely ancient age, fifty thousand or even ten thousand years before historic times; second, that what has been called the stone age and the bronze age existed contemporaneously; third, that both the stone age and the bronze age must be brought down to a date at least as late as about 400 A. D., as indicated by the Roman buckle found with this child.

How can anyone be sure of an ancient civilization or a " stone age " because of flint instruments which are occasionally found in caves and excavations? Not only the ancient, but the modern Indian used flint instruments. In Africa, there are still primitive tribes which wear no clothing and are correspondingly primitive in their habits. Other tribes wear various amounts of clothing, and are in varied stages of barbarism. Europe, no doubt, had its share of them within historic times.

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[18] *American Journal of Archæology,* Jan.-Mar., 1925, p. 86.

The writer asked Prof. Melvin Grove Kyle, the noted archæologist, within the present year (1926), what he believed should be the date of the stone age, and whether the flint instruments which are found in connection with human or animal remains indicate an ancient prehistoric period. His reply was: " Implements said to represent the stone, flint, or bronze age do not represent ages of time but stages of culture. Men who use stone implements may live in any age. There are people living in the stone age today. When America was discovered there were people in it who lived in the stone age. When the early settlers came there were people of the stone, bronze and iron ages living here contemporaneously. In Upper Egypt there are people who still use flint knives, although they are in possession of iron instruments. Even some physicians there use them for certain surgical work because they can be made sterile whereas it is difficult for them to sterilize their iron instruments."

Prof. Kyle, in his lecture on the discovery of Sodom and Gomorrah, says that when he and those with him were hunting for indications of an ancient civilization in the vicinity of the Dead Sea they looked for remnants of pottery which was used at the time of Abraham. And he asks, " why not look for relics in the form of iron or bronze? Because iron would have rusted entirely away and perhaps nothing would be left, or if anything were left it would simply be a red spot in the soil. Bronze also would have disintegrated, therefore we look for a certain style of pottery of that age. It is made of burnt clay and does not decay." From this statement it is clear that flint instruments may often be found without indications of iron instruments, but the iron may have been used by the same people though today it has rusted away. That the flint alone remains does not prove that they knew nothing of iron. Classifications of ancient relics are therefore often based upon ignorance rather than upon an exact knowledge of ancient dates.

We should let common sense take the place of a great deal of wild imagination concerning ancient peoples. It is altogether unnecessary to add tens of thousands, or hundreds of thousands, of years, in order to account for ancient barbarism.

It is absurd to talk about "*a* missing link." If there are "missing links" there *ought to be thousands*—yes, *millions*—of them. Man should be springing up in increasing numbers from some branch of the simian family in many places of the world. But the ape, the gibbon, the chimpanzee and the gorilla continue to remain just as simian-like as they were in the days of the earliest recorded history. To *imagine an ancient group of ancestors now extinct, is an ingenious method of side-stepping the issue* when men find themselves in a cul-de-sac.

ANCIENT GREAT MEN

Why should anthropologists spend almost all of their time in talking of subnormal individuals among ancient men? The few supposed fossil missing links are only a few among the many bones of ancient men that have been found. Degenerate individuals were present in every ancient nation as they are in those which are modern. Why not talk of the giant fossils in place of the morons and imbeciles? Why did Dr. Dubois not talk of the skeletons which he found, which were larger than those of any known race, in place of the Ape-Man? Why do not others dwell upon the men of *Cro-Magnon* and the *Dartford skull* rather than upon the Dawn-Man?

Representatives of what has been called the *Cro-magnon race* were found in 1868, in a watershed of Dordogne, France. A railway was being made. An old rock shelter was opened at Cro-magnon, a little above the cliff-set village of Les Eyzies. Remains of four skeletons were found. Keith says: "The brain capacity is above the average—roughly, 1,660 cubic centimeters, being 180 cubic centimeters above the modern average. We have come across, in those large heads, a puzzling and unexpected fact; we are naturally astonished to find that men who preceded us so long ago—men of a former geological epoch—should so far outstrip their successors of today who regard themselves as 'the survival of the fittest,' and believe the fittest to be the race with the largest brains. We cannot quarrel with the facts, but how are we to explain them? The conclusion to be drawn is, not that brain mass, on the average, is to be rejected as an index to brain power, but that there are other virtues or characters which go to insure success of a human race in the struggle for life—other than brain power."[19] We cannot but wonder why he did not see that God is the greatest factor to be taken into account in the life and progress of men.

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[19] *Op. cit.*, p. 55.

Other discoveries have been made since that time. Between 1895 and 1902, at Grotte des Enfants, along the French coast of the Mediterranean, a very tall man (six feet two and one-half inches) was found, a representative of the Cro-magnon race.[20]

Near Dartford, England, a fossil was found which has been called *The Dartford Skull.* Keith says of it: "The brain capacity is 1,740 cubic centimeters—fully 250 cubic centimeters above the modern average. The great size of the brain need not make us skeptical as to the antiquity of the skull. Even in the Neanderthal race, with all its ape-like characters, we have seen that some individuals, as at La Chapelle, went far beyond the modern average in mass of brain. Indeed, when we have become familiar with the implements of the Acheulean man, we are prepared to find that the brain that conceived and executed such works of art must have been one of a high order. . . . If the question is put to the modern anthropologist: Does the Dartford skull show any feature which at once distinguishes it from the skulls of the modern type? he must return the answer: No, not one! But it must also be remembered that the same may be said of every skull found in deposits that are later than the Mousterian period—the Combe Capelle, Cro-magnon, Brunn, Grimaldi crania, not one of these shows any features which we are not familiar with in modern skulls. . . . As a document, then, the Dartford skull is inconclusive. We cannot cite it as evidence that man of the modern type lived in England during the Acheulean period; yet we cannot reject it, for it is probably authentic." [21]

Some of the Cro-magnon men were six feet four inches tall. Some manifested great age, as the teeth, though sound, had been worn down to their sockets. Keith, in another place, says that these men were "the finest the world has ever seen." Dawson said the skeleton gave "evidence of immense muscular development." When discussing these remains, Macnamara said that the tradition concerning "a race of giants in far distant times was no myth." Why is this race regarded as being three hundred thousand years younger than Pithecanthropus and Eoanthropus? Simply because their magnificent development of brain and body does not harmonize with the theory of evolution. Rather, we regard the Cro-magnon men as being more nearly representatives of the race as God made them, and the Neanderthal men as degenerate individuals of the race.

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[20] Keith, *op. cit.,* p. 65.

[21] *Op. cit.,* pp. 168-170.

In a recent issue of *Science Service's Daily News Bulletin* (Washington) we are told that Sir Arthur Keith, in an address before the Royal College of Surgeons, said that men of the stone age in Africa had larger brains than the present generation. "An examination of the modern Bushman, and of the human remains discovered in the Transvaal, have led to the conclusion that prehistoric man in South Africa was a large-brained individual. His head was three-quarters of an inch longer than that of modern natives, but lower vaulted. The brain was in fact twelve or thirteen per cent larger than that of the average European. . . . Sir Arthur stated that it was a mistake to believe that the further back you went the more you would approximate to the negro type, for the negro of prehistoric times was less negroid than his negro descendants, and eventually one came to a common ancestor of both the European and the negro. The discovery of this large-brained, small-faced type was entirely unexpected. It had evidently been superseded in later times by a smaller-brained race."[22] This discovery and these admissions are hard to reconcile with the theory of the evolution of man. If it affords proof of anything it is that of a decrease in the size and the capacity of the brain of man and therefore of degeneracy in the race rather than progress.

Taking into account the recently reported large specimens of Dubois, *we have before us fossils of ancient men* from Java, and from France, and from England, and from Africa, who were *superior in size,* and apparently in *intellect,* to man as we know him today. Degeneracy in the human race is more evident than evolution. Men read history, " not with their eyes, but with their prejudices," when they do not recognize that in all nations, apart from the uplifting power of God, the tendency is downward. It is impossible to point to a single instance of a nation lifting itself from a state of barbarism by its own tendency to evolve. All upward movements among nations come, either directly or indirectly, from Christianity. A nation like Japan is not an exception to this fact. Japan remained at a standstill for many centuries, until it was influenced from without by civilized nations, and it began to copy them. History is a perpetual refutation of evolution. This fact is more evident in sacred history, but it is also apparent in secular history.

In the conclusion of his *Geology,* Joseph Le Conte said: " We have not been able to find any undoubted transition forms or connecting links between man and the highest animals."[23] Sir William Dawson said: " I know nothing about the origin of man, except what I am told in Scripture—that God created him. I do not know anything more than that, and I do not know anybody who does." Dr. W. H. Ballou said: "Gradually vast collections of fossils were made, to obtain which most of the surface of the globe has been scraped. . . . Genealogical trees were drawn from time to time, progressively, as it were. On the whole, it is rather amusing to scan the varied trees. The main stems below men are left as bare as the proverbial bone, clear down to the Monad and Monera. . . . I think every paleontologist of the world now admits that not a single missing link has been discovered below man, and that we know even less concerning the origin of man than we thought we did formerly." [24]

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[22] *Literary Digest,* Dec. 26, 1925.
[23] *A Compend of Geology,* p. 416.

F. Wood Jones, professor of anatomy in the University of London, in a booklet on *The Ancestry of Man* (1923), when speaking of reconstructions of human ancestors, says: "I find no occupation less worthy of the science of anthropology than the not unfashionable business of modeling, painting, or drawing these nightmare pictures of imagination, and lending them in the process, an utterly false value of apparent reality. If it should ultimately be agreed that the tooth of 'Hesperopithecus haroldcooki' in reality belongs to an anthropoid, there is nothing to justify those grotesque and purely imaginary pictures of the man-ape and his wife; and if it should be ultimately agreed that it belongs to a bear, what then of the credit of the modern paleontological interpretation of dental characters?" [25]

Prof. Jones holds that in place of man having evolved from the lower animals, the animals which resemble him most have descended from man. Although he says this theory is not acceptable to many of his contemporaries he quotes one of them as saying: " Man represents the straight line of development. It is the animals which have departed from this straight line, and for self-preservation have developed specialized characters (*e. g.*, the great strength of the gorilla), who have failed in the race of supremacy." And he adds: " With this statement I am in cordial agreement."

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[24] *North American Review,* April, 1922, pp. 544, 545.

[25] Pp. 33, 34.

Thus it is apparent that while one anthropologist holds that man has ascended from the lower animals, another holds that the lower animals have descended from man. Verily the " assured results " of the anthropologist have become sublimated into the thin vapor of inanity.

How can men talk of loving Jesus Christ and wanting to honor Him more by teaching evolution, when they ignore, or receive lightly, His plain statements of fact? Jesus Christ said: " *From the beginning of the creation, God made them male and female.*"[26] Has anyone had a better opportunity to know? He " was in the beginning with God. All things were made by him, and without him was not anything made that was made."[27]

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[26] Mark 10: 6.

[27] John 1: 2, 3.

X

READING THE OLD STONE BOOK

IN this chapter we turn to geology, which is the principal basis of organic evolution. To some, the rocks seem to boast of their great age and to assert that they are hundreds of millions of years old. To others they seem to affirm that they are comparatively young—only a few thousand years old. Can the rocks play a double rôle? Can they act a Dr. Jekyl and Mr. Hyde? Is the varied testimony of the rocks the fault of the rocks or the fault of those who interpret their language? Reading the " old stone book " is not an easy task, nor can it be done in a dogmatic manner. Many geologists, in recent years, have forgotten this fact and have spoken with the assurance of a prophet.

Kant and Laplace, a century and a half ago, when interpreting the rocks and whole crust of the earth, concluded that the world was once a nebulous mass of heated gas which contracted into its present solid, spherical form. In those days the center of the earth was supposed to be a hot molten mass. It was supposed that volcanoes burst forth from this molten mass, and the crust of the earth was still pliable. Today these theories have been discarded by leading scientists. It is estimated that the earth, as a whole, must be 1.5 times more rigid than hard steel or it would not resist the attraction of the sun and moon. The manner in which these bodies pull the water of the ocean in the formation of tides indicates what they would do to the crust of the earth if it were not extremely rigid. It is very doubtful whether the earth is hot in the center as was formerly supposed. Prof. G. M. Price, after averaging more than five hundred observations of Prestwich, which were all the reliable temperatures which that scientist could find recorded taken in mines, artesian wells and elsewhere, found that the average was 69.23 degrees F., which is possibly not higher than the average surface temperature of the earth in ancient times when tropical plants grew in arctic regions.

H. L. Fairchild says concerning the " Nebular Hypothesis ": " It has been conclusively shown by Professors Chamberlain and Moulton that the theory breaks down at every point where attacked by present-day physics and kinetics."[1] As the sun is supposed to be the condensed center of the original mass of heated gas which began to rotate and solidify, it should be rotating very swiftly. But this is not the actual fact, for it rotates but once in about twenty-five days. According to this theory it could never have revolved more rapidly than at present. It is impossible, then, to suppose that all the planets were a part of one original nebula. The earth rotates twenty-five times more rapidly than the sun, and Jupiter, though larger, rotates more rapidly still, for it turns on its axis in less than ten hours. It was supposed that the planets originated from a system of nebular rings, and in accordance with the theory they should rotate in the opposite direction from the central body. This, however, is not the case; on the contrary, they rotate in the same direction as the sun. Again, according to the theory, the satellites should revolve in the same direction as the planets, but in this their action is very disappointing. The one satellite of Neptune, the eighth of Jupiter, and the ninth of Saturn revolve in the opposite direction from these planets. The inner satellite of Mars speeds around that planet three times while its supposed parent rotates once, but according to the theory it should move more slowly.

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[1] *Scientific Monthly,* July, 1924.

If we should consider the more recent hypothesis known as the "Planetesimal," we should simply consider an hypothesis which works upon opposite principles, that of an original mass of matter becoming disrupted and expanded rather than condensed. But these same difficulties stand in the way of its acceptance, as well as many others which we have not mentioned. It is useless to speculate on the manner in which Almighty God brought our world and the universe into being. God has told us in Divine revelation all that we shall ever know concerning the plan of the formation of the world. The appearance, the size, the velocity of rotation, and the direction of rotation of the various units of our solar system completely baffle any set of formative laws which man has been able to devise concerning their origin.

When we turn to the less remote history of the origin of the rocks, or from astronomy to geology, we meet with a variety of theories which are no less puzzling. Over a century ago the rocks seemed to say to A. G. Werner (1749-1817), a German professor, that they were originally laid down in regular order all around the world, as one layer of an onion covers another. He had never been out of his little district around the Erz Mountains and the neighboring parts of Saxony and Bohemia. His observation was naturally too narrow to fit the whole world, and has long since been abandoned.

To Georges Cuvier (1769-1832) the rocks seemed to testify that they should be classified in age according to the kind of fossils which were found in them. He did not, however, see any relationship between the fossils of the rocks and the plants and animals of the modern world. He thought that all the fossils were remains of extinct species.

J. B. deLamarck (1744-1829), though especially remembered as a biologist, was also a paleontologist. According to his theory, species are transformed into new and more complex species as a result of their environment; that new and better adapted structures are acquired, due to the use of certain organs. This theory, though it was ridiculed at first, and is now known to be unscientific, yet along with the natural selection of Darwin, had a large part in promoting the theory of evolution.

It was Sir Charles Lyell (1797-1875), however, who may be looked upon as the founder of the theory of modern geology. In his theory of *uniformity* he attempted to account for the growth of the rocks and all the changes which are recorded in them according to the modern slow and natural action of the laws and elements of the world. He thought, as did Cuvier, that the rocks may be classified by the fossils which they contain, but that the fossils were placed in rock-forming sediment, not by a series of catastrophes, which was the theory of Cuvier, but by a slow rising and falling of the surface of the continents, or of the ocean bed.

Lyell's *Principles of Geology* was a new book when Charles Darwin (1809-1882) was a young man of twenty-three. Though Darwin had matriculated at Cambridge as a candidate for the Church, his liking for the natural sciences was so strong that he accepted the offer to go as a naturalist on the ship *Beagle* in a voyage of exploration around the world. He took Lyell's

Geology with him and studied it approvingly, with the result that, though he started as a believer in special creation, he returned to England, after his five-years' voyage, devoted to the theory of uniformity, and a short time later to the evolution of species. Darwin was a friend of Lyell, dedicated his first book to him, and spent his life in the effort to prove the theory of organic evolution. Prof. Louis T. More, in his lectures delivered at Princeton University, last January, said, concerning Darwin, that "Today, every one of his arguments is contradicted by facts." With reference to his *Origin of Species,* he adds: "A careful analysis of its contents shows that his argument for natural selection is based on the vague confirmation from geology that species have in some way changed and on the analogy of changes in domesticated animals and plants by man's selective breeding."[2]

THE NEW GEOLOGY

Though geologists in general for a hundred years past have interpreted the language of the rocks, as did Lyell, and have accepted the theory of uniformity, or slow evolution, to Prof. G. M. Price they give an entirely different testimony. To him they declare in no uncertain manner that their stratification, their composition and their fossil contents have almost nothing to say of age. They tell of a great catastrophe, accompanied by a mighty upheaval of the ocean, and earthquakes, together with a great flood, the waters of which prevailed upon the earth for a considerable length of time, and in some of the continental basins for perhaps centuries.

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[2] *The Dogma of Evolution,* pp. 194, 195.

This theory is revolutionary in the science of modern geology and, as might be expected, it has been bitterly attacked by " orthodox " geologists. Prof. A. M. Miller, writing of him before the publication of his *New Geology,* admits that he has gone into the literature of the subject, but criticized him because he was not a member of any scientific body, yet styled himself " geologist." [3] Since the appearance of his *New Geology,* Prof. Charles Schuchert has called him " a fundamentalist harboring a geological nightmare." He is greatly exercised because he rejects " the things that have long been accepted as the fundamentals of this science," and substitutes " his new catastrophism." Professor Schuchert shows his disrespect not merely for Price, but for the Word of God, when he speaks of " our old friend, the ' universal deluge,' " and of " the little ark that harbored a loving pair of all living species of plants and animals." [4]

Before Price wrote his *New Geology,* he studied the subject for at least a quarter of a century, and gave the most of his time for ten years previous to its publication in observation, study and preparation of material for the book. Even his critics admit that he has gone into the literature of the subject. He is a member of the American Association for the Advancement of Science and is well qualified for writing on the subject of geology. Why, then, has he no right to propose a new theory? Almost every man who has proposed a substitute for a long-accepted theory of science has been ridiculed. It was true of Copernicus, and his theory was about a hundred years in gaining general acceptance. Darwin sneered at Lamarck, and scientists ignored Mendel and accepted Darwin. What special equipment had Darwin as a geologist or biologist when he went on the *Beagle* as a naturalist?

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[3] *Science,* June 20, 1922.

[4] *Science,* May 30, 1924, p. 487.

In a book just issued by Robert H. Murray, entitled, *Science and Scientists in the Nineteenth Century,* the author presents a mass of evidence to show that scientists have often been mistaken in their judgments. " Like other men, they are victims of preconceptions, which blind their eyes and forbid them to see the truth or, in some cases, even to acknowledge it when they see it." Sir Oliver Lodge, who writes the introduction, says: " When the errors of our predecessors are forced upon our notice we may lament them or be amused at them, but that the same lamentations and excuses may some day have to be made for us we can hardly think possible." Mr. Murray shows that the theories ridiculed by one generation become the dogma of the next, and that dogma is thrown down again on the dust-heap by the one after. He deals with the following subjects: Jenner and vaccination; Simpson and chloroform; Lyell and uniformitarianism; Helmholtz, Joule and the conservation of energy; Darwin and evolution; Pasteur and microbes, and Lister and antiseptics. They are all men of the nineteenth century who lived in a great age of science and " not in a remote and benighted past." Mr. Murray says that it is easy to understand why Jenner, Darwin and Lyell encountered great opposition because they were at variance with popular prejudice and established beliefs. But, as a reviewer says in the *London Times,* " such opposition is generally thought of as confined to those who for one reason or another had no knowledge of science and sympathy with it. The point that Mr. Murray brings out is that the greatest and most damaging opposition came from scientific contemporaries, and that the same opposition was offered to discoveries which were made entirely within the realms of science and did not impinge on the outside world at all, as did those of Jenner and Darwin. Such was the fate of Joule and Helmholtz in the field of pure physics. Both were frigidly snubbed by the leading physicists of their own countries. . . . Some discoveries are overvalued, others undervalued. An instance is the refusal of one geographical society to believe in Stanley's real journey into Central Africa and another's acceptance of Cook's apocryphal one to the North Pole; another instance in a different field is the unhesitating acceptance of Koch's tuberculin, in 1890, contrasted with the determined skepticism that greeted the announcement of Pasteur's preventative treatment of hydrophobia and, a few years later, the serum treatment of diphtheria. The cause is the same—inability to weigh evidence. The scientific world is constantly proving itself a bad judge of evidence." As John Burroughs said of Darwin, we may not reject his facts, but any man has a right to criticize his theories. Surely Price and others have a right to criticize the theories of geology, though they have been widely accepted.

Prof. Price does not maintain that there is no difference whatever in the age of the rocks which are found in the upper and lower strata, but he does insist that the difference may not be very great. It may be a matter of only a few days, or a few weeks, or in some cases where the water remained in interior basins, of a few hundred years. He repudiates the idea, as being both unscientific and unscriptural, that the fossiliferous rocks were hundreds of millions of years in the process of formation, and that it was due to the natural action of the elements. He insists that throughout the world, as recorded in the rocks, there is evidence of a great catastrophe, at which time the various kinds of living things were destroyed in great multitudes, that they were covered over with earth or sediment in which they were preserved, and which, in course of time hardened into rock.

When the geologists differ, how are we to determine who is right? As in any case of a difference of opinion, we should examine the evidence. Suppose a Mr. Smith is on trial. At the opening of his testimony, he says: "I shot Mr. Jones." Mr. Locke, a juryman, wheels round in his chair as much as to say, "That settles it with me, you shall hang." Another sits listening intently for the remainder of the evidence, which shows that Mr. Smith shot in self-defense, and that, after his life had been seriously threatened and endangered by shots from Jones. Surely Mr. Locke will have to change his mind. Let us see if the more complete evidence of today on the subject of evolution does not vindicate the theist and corroborate the record of the Scriptures.

PALEONTOLOGY

Paleontology is the science which treats of the ancient life of the earth as found in fossils. A fossil is the remains of an animal or plant as found in the rocks. It may consist merely of natural impressions made by an animal or plant upon the surrounding rocks, or even of tracks of birds or reptiles. There are also the remains of soft tissues of ancient animals preserved in frozen regions; these are classified as fossils. The students of paleontology claim they can trace the evolution of ancient life, through the study of the fossils, from the simpler to the more complex forms of life. Biology deals with a very narrow sphere of evolution in comparison with paleontology, and paleontology is like a picture without a background apart from geology (the science which treats of the past conditions of the earth and of its inhabitants—Le Conte). If one attempts to formulate a theory of evolution by comparing fossils without any reference to the surrounding strata and locality in which they are found, he merely speculates; he can form no idea of the age of such fossils. He is like a child attempting to spell words with his blocks when he does not know the alphabet. If you see the picture of a man as he stands alone, you might guess that he follows one of a dozen different occupations, but if you see his picture in a barnyard, you have reason to suppose that he is a farmer. If you have a picture before you of the supposed evolution of the horse as arranged in the American Museum of Natural History, in New York City, showing photographs of feet and heads in an imagined ascending scale from a four-toed to a one-toed creature, how do you know that these differences have anything to do with age? How do you know that these fossils were not all formed near the same time? You need the background of geology, and you need full information concerning the strata and the location in which these strata are found in order to reach any conclusion. Moreover, if this conclusion is to be worth anything, it must be based upon real evidence, not upon a preconceived theory handed down from some skeptical speculator.

We must turn, then, to geology as the most important branch of science in the study of evolution. Darwin's theories were suggested by his studies of geology, and we go there for the major part of our information to disprove them. As L. T. More says: " Geology is the indispensable science by which we estimate the time factor of evolution and arrange our chain of variation."[5] Suppose we allow one hundred million years, which is not an unusually long estimate from the standpoint of most geologists (some place it as high as a billion years), as the time during which evolution has been going on from the simplest forms of life, and suppose it has been five thousand years since the earliest records of history and archæology furnish any information concerning some forms of life: then we have twenty thousand years of fossil life to one of history in which to study evolution. This makes clear the importance of the study of the age-theory of geology. G. M. Price says: "The fathers of our science always present us with the geological 'time-table' ready-made. . . . For nearly a hundred years, it has been assumed and confidently asserted by writers on geology, that the fossils always occur in a very definite order of sequence, this order being a true historical order, thus showing the real order in which life has occurred on the globe. . . . If we are to start with the raw facts, instead of beginning with the *ipse dixit* of some expert, our first question will be, *How shall we begin such a chronological series?* That is, how shall we fix on certain rocks containing fossils, or fix on certain fossil types, which are undeniably older than all others hitherto discovered? . . . How are we to find the real bottom of the fossiliferous series?" [6]

Before beginning to answer these questions, to show that the so-called geological ages and eras are a purely artificial arrangement without foundation in fact, or have any place in a truly scientific theory, it may be well for us to refresh our minds with their order as they are commonly classified by geologists. We name them in the order in which they are said to be found in the earth, those which are said to be the oldest coming first and lowest down.

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[5] *Dogma,* p. 147.

[6] *New Geology,* pp. 610-612.

GEOLOGICAL TABLE

Age or Group	Era or System	Epoch or Series	Dominant Type of Life
Cenozoic (Recent life)	Quaternary	Recent Pleistocene	Man
	Tertiary	Pliocene Miocene Oligocene Eocene Paleocene	Mammals
Mesozoic (Middle life)	Cretaceous Jurassic Triassic	Upper Lower	Reptiles Conifers and Palms
Paleozoic (Ancient life)	Permian Carboniferous Sub-carboniferous Devonian Silurian Ordovician Cambrian		Amphibians and Coal plants Fishes, insects Invertebrates
Pre-Cambrian	Algonkian Archæan		Few Fossils or none

Now, let us note some of the facts which prove that there is no sufficient evidence to substantiate the uniformity theory upon which this geological table is based.

1. *There is no place in the world where the theory can be proved. The rock strata have not been found arranged in this order in any place on earth. Parts of*

two or three consecutive systems, or rocks supposed to represent such eras, *are as much as are ever found in any one locality* together.[7] This is a fact which should be kept clearly in mind by every student of geology and of evolution.

2. *Rocks containing fossils are not being formed in modern times as they were once formed.* It is impossible to show that rocks are being formed at the bottom of the ocean or on the coast. If the theory is true, we should find fossils in every stage of formation at the present time. Corals continue to grow, certain things are being petrified, stalactites and stalagmites are being formed; but none of these compare to the formation of rocks in general as they were laid down of old. The search of the ocean bed reveals merely ooze in the deep part and sand and sediment on the continental shelf.

3. *The coast line is not generally rising and falling, as was formerly held.* The submerged forests and peat bogs found along some coasts indicate sudden changes of level, not slow gradual changes. Eduard Suess (1831-1914), the well-known Austrian geologist, found the theory of the changes of the coast line to be unfounded. He says: " Phenomena confront us which testify to the stability of the existing state, which has endured since the remotest period of human tradition, or since a period even earlier still: in hundreds of localities, the sea has graven its mark deep in the rocks at the level of the tide."[8] After a careful examination of recorded observations in Northern Europe and Arctic America, he says: " Even in these seas, displacements susceptible of measurement have not occurred within the historic period."[9] After reviewing all the

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[7] See Price's *New Geology*, p. 296.

[8] *The Face of the Earth*, Vol. 2, p. 554.

[9] P. 497.

available evidence, he concludes: " As our knowledge becomes more exact, the less are we able to entertain those theories which are generally offered in explanation of the repeated inundation and emergence of the continents."

4. *The appearance of the rocks does not harmonize with the theory.* Rocks which are classified as older because of the fossils which they contain, often appear younger. Others which appear older, having a greater degree of solidification or crystallization, are often said to be younger. Examples of those which are young in appearance are the Cambrian beds in Wisconsin, and in Petrograd, Russia. These have the appearance of clays scarcely hardened and sands still incoherent, as some recent river deposits. Others said to be comparatively young are the Eocene schists of the Alps and marbles of the Himalayas, but they are as highly crystaline as the oldest Paleozoic rocks.

5. *The mineral composition of the rocks does not harmonize with the theory.* At first the chronological arrangement of the rocks was based chiefly upon their minerals or lithological character. Now that is almost entirely disregarded. An instance may be found near Banff, Alberta, where Lower Cretaceous rests upon Sub-carboniferous, without any apparent break, and the two beds are lithologically almost exactly alike. Mr. Selwyn, the director of the Geological Survey of Canada, said concerning these strata: " Were it not for fossil evidence, one would naturally suppose that a single formation was being dealt with."

6. *The rocks of any system may be found on the surface.* Not only is this true, but any system may constitute practically all of the surface rocks of any locality either with or without other fossiliferous rocks below.

7. *The older rocks often rest on the younger in natural order.* All of Glacier National Park, and extending on up into Canada, covering an area of about 20,000 square miles, the Algonkian rest upon Cretaceous. The cretaceous run under from every side. Were it not for the theory that the Algonkian are older, everyone would naturally think that the cretaceous strata were laid down first and the Algonkian afterwards. In the Appalachian Mountains, in parts of Georgia, Alabama, and Eastern Tennessee, the Cambrian rest in apparent conformity (natural order) upon the Carboniferous. Many such examples might be given from various parts of the world. A theory has been invented to explain such cases called a "thrust-fault," which means that one series of strata has been pushed up and over the other. Then, in order to leave the older rocks on top and over the younger, it is supposed that all the upper strata, probably several thousand feet deep, have been washed away. In Montana and Alberta this means that a section about 20,000 miles in area was elevated 20,000 to 30,000 feet and pushed forward over soft cretaceous shales for at least thirty miles, and then the upper strata 18,000 to 25,000 feet deep was entirely washed away. In Scandinavia, it would mean that a district 1,120 miles long had been shoved horizontally eastward for a least eighty-six miles. It would mean that the Alps were pushed northward sixty miles. Dr. Albert Heim once wrote to Professor Price concerning such explanations: "The most incredible mechanical explanation is more probable than that the evolution of organic nature should have been inverted in one country as compared with another."[10]

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[10] *New Geology,* p. 636.

8. *The very young rocks often rest on the very old in natural order.* For example, in Northern Russia, at Ust-Waga, Pleistocene beds rest conformably upon Permian sediments. In Northeastern China, throughout four provinces, the Carboniferous, composed mainly of shales, rest in strict conformability upon Ordovician limestones.

9. *Rocks containing fossils of deep-sea life are found between strata formed from land sediments.* In Westmoreland County, Pennsylvania, is a four-foot stratum of crinoidal limestone between two thick beds of shale, with coal beds both above and below. Price asks: " How did it get there? " And then adds: " Almost all our modern crinoids live in the clear depths of the ocean, from six hundred feet to over a mile down. At such depths, there are no land sediments now being deposited in our modern seas, or as Dana says, 'No means of producing a stratified or bedded structure.' It seems self-evident that nothing but a wholly abnormal occurrence, a disturbance of the oceans to their very bottom, is sufficient to explain these conditions." [11]

Professor Price says there are a multitude of examples like the foregoing which might be listed from every quarter of the globe, wherever careful investigation has been made. Another experiencd geologist says that he himself has examined about a thousand such instances. How are we to explain all of these upside-down and out-of-place strata? Shall we allow our imagination to run riot and suppose there were great folds in the earth extending several miles high and hundreds of miles wide, or that there were great " thrusts " extending for hundreds of miles, and that thousands of feet of the overlying strata were washed away, and call this " deceptive conformity " in order that we may still cling to our much-loved theory of evolution? Such explanations might do for " Tom Sawyer." If one should find them in Mark Twain's books, he would see the absurdity of them at once, but when they are found in a sober, dignified text-book of science, men accept them without hesitation.

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[11] *New Geology,* p. 204.

The arrangement of the geological table with which we have been dealing is not the result of field observation, it has been prepared in the study of speculators. Either the theory is wrong or the rocks are wrong. Suppose you should find the roof of a house which has been washed away and is covered over in the bed of a river with mud and sand. When you examine it, you notice that it has on it different kinds of shingles. Are you justified in concluding that this house was built in sections centuries apart? Many houses have been covered with a variety of shingles when first built. The writer can see such a roof from his study window. The rock strata have evidently been laid down one over the other, but there is nothing to indicate that ages have intervened between their formation: perhaps they may have been laid down within a few days or a few weeks.

Price gives the proper answer to Lyell and his successors in these words: " Any kind of fossiliferous beds whatever, ' young ' or ' old,' may be found occurring conformably (parallel as originally laid down) on any other fossiliferous beds, ' older ' or ' younger.' . . . This law forever puts an end to all evolutionary speculations about the order in which the various plants and animals have developed, in the minds of those who are correctly informed regarding these facts. This law alone is quite sufficient to relegate the whole theory of organic evolution to the lumber room of science, there to become the amusement of future students of the history of cosmological speculations." [12]

To what extremes of absurdity will men go rather than take God into account and accept His record of history at its face value! They leave God out of the reckoning; then there must be nothing unusual in all the history of the world: no special creation, and of course, no great catastrophe on account of sin. How much more simple it would be to accept the Divine Record of a world-wide flood, together with the breaking up of the fountains of the great deep; to try to conceive how the earth must have been shaken by such a catastrophe, and how the tides must have swept backward and forward over the earth, piling animals and plants and ocean life in great graveyards, covering and preserving them so that their fossils or imprints might be kept in remembrance so long as the world should last! As the tide swept in one direction, it might carry with it ocean life: as it retreated, it might cover that over with the remains of land life. This will account, in a very natural way, for the present intermingled arrangement of the fossils in, and composition of, the rock strata. Such an explanation eliminates the ages of geology, undermines organic evolution, and substantiates the Word of God.

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[12] *New Geology*, p. 638.

XI

THE TESTIMONY OF THE MAMMOTHS

HOW would you like to eat breakfast of meat preserved in a refrigerator for 850,000 years? If Sir Charles Lyell, Darwin's preceptor, is correct as an historical accountant, this has actually been the experience of some Siberian explorers. If these explorers had employed Sir John Lubbock as their accountant he would have told them that they had been deceived about the age of this meat, as it was only 200,000 years in refrigeration. But even those who place greater reliance on Ussher as a chronologist would scarcely regard elephant steak which had passed the four-thousand-year mark as being too fresh to be juicy. One would think that it would make a striking, if not attractive, " ad " for a café in New Siberia to display on its morning bulletin, in full view of hungry travelers—" Elephant T-bone steak, 850,000 years old —not too fresh—nice and juicy! "

We are still considering the argument from paleontology (extinct life). A fossil may consist of soft tissue as well as of impressions made upon the surrounding rocks. In Northern Siberia, in various localities along almost the whole northern shore, from the mouth of the Obi to Bering Strait, particularly in New Siberia, Bear Island and the Liachoff Islands, there are found huge fossil mammoths preserved in the ice. The flesh of some of these creatures has been so well preserved that it has been eaten by polar bears, wolves and dogs, and in some instances has been found in such a perfect state of preservation as to be eaten by the explorers who discovered them. Many of them have been found with their stomachs full of undigested food, and at least one was found with its mouth full as well, which indicates that some sudden crisis overtook these creatures. There is evidence of the kind of crisis in the fact that the blood vessels of the head are congested with blood, as in animals suffocated by drowning. The noted geologist, James D. Dana, said that the climate which was evidently mild when so many of these great creatures were living there, must have " become suddenly extreme as of a single winter's night, and knew no relenting afterwards."

How shall we account for the presence of these great elephants near or within the Arctic Circle? The writer asked this question recently of a geologist of a well-known university. He replied that " they might have fallen into some fissure. Such fossils are very rare," he added; " there are very few of them on record." Shall we suppose that there was a wreck of some ancient " Ringling Brothers," which was on its way to show beyond the Arctic Circle? As a matter of fact, there are not a " very few " of these " Siberian Mummies." They have been found by the thousands. The soil of Bear Island and the Liachoff Islands is reported to be almost as full of mammoth bones as of sand and ice. They become more abundant farther north, many of them having been collected from the islands of New Siberia. For nine centuries at least there has been a regular trade in the tusks of these fossil mammoths. They have been marketed in China and Europe, and so large has been the trade, that there has been a quotation of prices for this fossil ivory as for prices of wheat.

At the annual sale of ivory in London, in 1872, there were 1,630, and the next year 1,140 tusks of Siberian mammoths placed on sale. Prof. G. M. Price, to whom the writer is indebted for most of these facts, says that a writer in a recent English magazine states "that in one year he himself saw a thousand (of these mammoth) tusks." Bones and tusks of these animals are found over much of northern Europe and northeastern America. Sir Henry H. Howorth, over a third of a century ago, in *The Mammoth and the Flood,* and in his later books, presented a convincing argument against the Glacial Theory. In the preface of his book, *Ice or Water,* he says: "Long ago, when I was a mere boy, I was corresponding with Darwin on a subject which had always interested me, namely, how to account for the carcasses of mammoths and other beasts being preserved whole, in the frozen ground of Siberia; for the vast hecatombs of buried skeletons and bones of his contemporaries in different parts of the world; and for the great gap in the evidence and the hiatus which exists between the remains of these animals, including primitive man, and the remains of the succeeding races of men with their domesticated animals.

"Darwin, like many others who have looked the problem face to face, confessed to me that it remained to him the one stupendous mystery in the later geological history of the world, for which no rational explanation had been forthcoming."

That these mammoths did not fall into some fissure in the strata is shown by the fact that they are not found in clear ice, but in stratified beds of sand or gravel between which there are beds of clay. All of these beds are continuous and undisturbed as a natural deposit.

Were these creatures adapted to, and natives of, a cold climate? Some geologists present supposed pictures of them covered with long hair and fur, that would enable them to face an arctic blizzard in comfort. This is a false representation. The coldest spot on earth is not at the north geographical pole, but in Northeastern Siberia, where these fossils abound. Even if they could have lived in such an extreme climate, they could have found little or nothing to eat. They were not adapted to such a climate. M. H. Neuville says[1]: "The very peculiar fur of the mammoth thus furnished only a precarious protection against cold, a protection analogous to that enjoyed at present by a few mammals of the tropical zone. Its dermis was, it is true, very thick, but no more so than that of existing elephants. It appears to me impossible to find in the anatomical examination of the skin and pelage, any argument in favor of adaptation to cold." Its skin, when subjected to microscopic examination, reveals the fact that it is without sweat glands, as in the case of the modern elephant and a few animals which live in the tropics. Moreover, along with the mammoths, there have been found fossils of rhinoceroses and other animals which are adapted to a mild or tropical climate. The evidence indicates that the same great catastrophe which caused the burial of these animals was accompanied by a sudden change of climate which was also permanent.

In the far north, as in Greenland, Iceland and Spitzbergen, there are fossils of beeches, oaks, poplars, walnuts, magnolias, holly, logwood, ivy and grapevines. There are also coral limestones in the far north. The limestones and coal beds of the Carboniferous are the rocks which are nearest, as far as is known, to the north pole. It is supposed that they underlie the polar sea. These, and other facts, as A. R. Wallace says, "uniformly testify that a warm climate has in former times prevailed over the whole globe." Or, as G. M. Price says: "There is but one climate known to the ancient fossil world, as revealed by the plants and animals entombed in the rocks; and that climate was a mantle of springlike loveliness which seems to have prevailed continuously over the whole globe. Just how the world could have thus been warmed all over may be a matter of conjecture; that it was so warmed effectively and continuously is a matter of fact. . . . That such a condition existed can no more be doubted than can the existence of Nineveh and Carthage." [2]

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[1] *Report of the Smithsonian Institute,* 1919, p. 332.

No theory of "uniformity" can explain all this. No gradual rise and fall of coast lines such as is known in modern times could bring about such marvelous changes of climate as would eliminate whole races of those mighty creatures which once roamed the earth. Nothing less than a world catastrophe such as that recorded in Scripture, when "the fountains of the great deep were broken up," and the very foundations of the earth were shaken, furnish an adequate explanation.

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[2] *The New Geology,* pp. 652, 682.

XII

THE TESTIMONY OF THE DINOSAURS, FISHES AND INVERTEBRATES

ALMOST as difficult a problem for the evolutionist to explain as the " Siberian Mummies " is the sudden disappearance of the mightiest monsters which ever walked on earth, commonly known as the Dinosaurs. They are classified as reptiles. Their fossils vary in size from that of a small dog to over eighty feet in length. Some of them were so large that they could have led an elephant like a " poodle " beside them. A reconstruction of the largest dinosaur is found in the Field Museum in Chicago. There is one in the American Museum in New York which is over sixty-six feet in length and is supposed to have weighed about thirty-eight tons. One in the Carnegie Museum in Pittsburgh is eighty-seven feet long. It is asserted that some of these animals ate vegetables, some ate animals, and some ate both. It seems that some of them swam in the ocean, some walked on land, and some flew in the air. Some of these flying reptiles had a stretch of wing of over twenty feet. It is supposed that the beast had two brains. There is a large sacral portion in the spinal column twenty times the size of the brain in the head. Some one, possibly a college student, wrote as follows of these great reptiles:

" Behold the mighty dinosaur,
Famous in prehistoric lore,

Not only for his weight and strength,
But for his intellectual length.
You will perceive by these remains
The creature had two sets of brains—
One in his head (the usual place),
The other at his spinal base.
Thus he could reason *a priori*
As well as *a posteriori*.
No problem bothered him a bit;
He made both head and tail of it.
So wise was he, so wise and solemn,
Each thought filled just a spinal column.
If one brain found the pressure strong,
It passed a few ideas along;
If something slipped his forward mind,
'Twas rescued by the one behind;
And if in error he was caught,
He had a saving after-thought.
As he thought twice before he spoke,
He had no judgments to revoke;
For he could think without congestion,
Upon both sides of every question."

Reptiles are unlike man and the higher vertebrates which at a certain age reach a maximum size: they continue to grow throughout life. Hence, the enormous size of these creatures indicates something of their great age. They likely lived for centuries.

The fossils of these reptiles have been found in great numbers, and in various parts of the world, including East Africa, Madagascar, India, Patagonia, Wyoming, New Mexico, Texas and Colorado. They are found in almost all the leading museums of the world. Henry Fairchild Osborn says, concerning the exploration of the " Bone Cabin " quarry, in central Wyoming: " In the Bone Cabin quarry, we came across a veritable Noah's Ark deposit, a perfect museum of the animals of the period. Here are the largest of the giant dinosaurs closely mingled with the remains of smaller but powerful carnivorous dinosaurs which preyed upon them, also those of the slow and heavy-moving armoured dinosaurs of the period, as well as the lightest and most bird-like of the dinosaurs. Finely rounded, complete limbs from eight to ten feet in length are found, especially those of the carnivorous dinosaurs, perfect even to the sharply pointed and recurved tips of their toes." Some of these beds of rock are two hundred and seventy-four feet in thickness. Some of the bones are found on the surface, but most of them have to be dug out of the rock.

These great reptiles are found in what are classified as Jurassic or Cretaceous rocks. They are supposed to be millions of years older than the mammals and man.

What is there in the story of these fossils which does not harmonize with the theory of evolution?

1. *Their size.* If evolution is gradual and more highly developed forms of life are constantly coming into being, we should find larger living dinosaurs than those which are found in fossils.

2. *Natural selection.* If creatures which survive depend upon natural selection, the dinosaurs, the largest and most powerful of all known creatures, ought to outlive all others. These great brutes could live on land or in water. They could fly in the air and were almost as large as an aeroplane. Some of them were armored like a modern "tank," having a coat of mail which a rifle bullet would not pierce. They could eat almost anything, either plants or animals. In place of remaining supreme in the earth, as they should by the theory of natural selection, they have been entirely cut off; their race is known only in fossil history.

3. *Their contemporaries.* (a) They are found asso-

ciated with fossil plants which are modern. "This flora includes palms, like the palmetto of Florida, the gingko of China and Eastern Asia, the fig, and the Sequoia, like the big redwoods of California. But the plants are very *modern* in aspect; and there is not the slightest warrant for saying that the associated reptilian remains collectively are a day older than the Tertiary beds of the Western States and Europe. Nothing but pure, unfounded hypothesis and theoretical speculation stands in the way of our saying that these reptiles were contemporary with the almost equally gigantic mammals whose skeletons are found in other parts of these Rocky Mountain regions, as well as in various parts of the world." [1]

(b) There is evidence that they lived at the same time as man. Mr. Samuel Hubbard recently discovered in Arizona some pictures of dinosaurs on the rocks, on the wall of a deep canyon which he has described in *The Boston Transcript*. The rock is of red sandstone, and the iron in the rock has coated the surface with a black scale called "desert varnish." These pictographs "included one of an elephant attacking a man, the first elephant drawn by prehistoric man ever found in the United States, so far as the writer knows. Another was a group of animals, undoubtedly the ibex, a two-horned antelope still found in the mountains of Asia, whose bones have been discovered in European caves, but the trace of which has never before appeared in the New World. The third and most valuable is a pictograph of an animal quite evidently intended to represent a dinosaur." A scientist who had made a special study of the dinosaurs, when he saw a photograph of this rock picture, said: "It cannot be a dinosaur; that is impossible, because we know that dinosaurs were extinct twelve million years before man appeared on earth." Mr. Hubbard replies: "On the edge of the Painted Desert, less than one hundred miles from the carved figure, the Doheny Expedition found tracks of not one dinosaur, but of several, imperishably impressed in the stone valley about eight miles west of Tuba City. These were immediately and unhesitatingly identified by my companion, Charles W. Gilmore, curator of vertebrate paleontology in the United States National Museum, who was present when they were discovered, to be petrified footprints of dinosaurs. He further pronounced them to be tracks of carnivorous dinosaurs, because the marks of the claws on the huge three-toed feet were plainly visible.

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[1] *New Geology,* pp. 532, 533.

"I submit that, if man carved the picture of the dinosaur on the rock, he must have seen that dinosaur. Without doubt, the carnivorous varieties of this huge lizard were the greatest enemies of man, if man existed at that time. There was, therefore, every reason for this prehistoric master of the flint and sandstone to have portrayed the dinosaur as an animal to be avoided, as dangerous to man. To me, this carving says as plainly as if written in letters a foot high, 'Beware of the Dinosaur!'"

The man in the picture is not of a lower order or ape-man, but fully developed as he is today. The artist was evidently a skilled and intelligent man.

4. *Their extinction.* Dr. W. D. Matthew says: "The cutting off of this giant dinosaur dynasty was nearly, if not quite, simultaneous the world over." R. S. Lull states: "One of the most inexplicable of events is the dramatic extinction of this mighty race." In

connection with these statements we should remember that these great creatures were not confined to the region of the Rocky Mountains, but were found in Europe, Asia, Africa, and South America as well. There must have been some great catastrophe which destroyed them in all the continents at the same time.

The fossil remains indicate that along with them there perished great ground sloths, mastodons, rhinoceroses, camels, many species of horses, several tapirs, numerous kinds of giant pigs, extinct bisons, the giant beaver and the sabertooth tiger."[2] It is impossible to explain all this by any *uniformity theory.* If men would read the fossil history "with their eyes and not with their prejudices," they would turn to the account of the flood in the Bible as a sound historical record on which to base an hypothesis. They could not but see, that in comparison with ancient, the present fauna and flora of the world are degenerate. They would conclude that the fossils have nothing to do with determining the age of rocks.

THE FISHES SPEAK

When we take into account the evidence which is available to show—as Prof. J. M. MacFarlane, of the University of Pennsylvania, has done—that fish have been killed in unknown millions by some sudden catastrophe, and this in various parts of the world, we are at a loss to know how to explain the evidence in harmony with the theory that ages were required to form these rock strata. He says: "It can be definitely said that, through all the geologic formations in which fish remains occur, a large proportion of the remains consist of entire fishes or of sections in which every scale is still in position, every fin is extended as in life attitude; the bones of the head, though often crushed in or broken through subsequent diastrophic strains, still retain almost normal positions; while near them may be caprolites of the same or other types of fish in a practically entire state. All of this conclusively proves that when myriads of such fishes were simultaneously killed, their bodies were deposited or stranded within a few hours of a few days at most after death, so that the flesh, the liver, the alimentary canal and other soft parts, were unquestionably enclosed and intact, when sediment filled them up. For numerous experiments which the writer has undertaken prove, that even after five or six days dead fishes begin to lose scales, to be attacked and nibbled at by other fishes, by crabs, and by smaller fry, while as yet the flesh and entrails are enclosed, though softened. We unhesitatingly conclude, then, that a large proportion of the fishes met with in ' fish beds ' and oil strata were stretched out and preserved intact either immediately or within a day or two at most after death."[3] Hugh Miller, speaking of the fossils of Devonian rocks of Scotland, says that " some terrible catastrophe involved in sudden destruction the fish of an area at least a hundred miles from boundary to boundary, perhaps much more." Then he asks this significant question: " By what quiet but potent agency of destruction were the innumerable existences of an area perhaps ten thousand square miles in extent annihilated at once? " Along the northern border of the Mexican Gulf, both in the rocks and on the surface, there are vast numbers of whale vertebrae.

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[2] *The Pleistocene of North America and Its Vertebrated Animals,* p. 5.

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[3] *Fishes, the Source of Petroleum*, p. 400.

They must have been stranded, as Dana says, " in a common catastrophe."

THE INVERTEBRATES SPEAK

There is evidence also that vast areas of invertebrates (animals which have no backbones) were killed in some sudden and extraordinary manner. There are millions of instances in which the two valves of the shells of pelecypod (hatchet foot) mollusks (oysters, clams, mussels, etc.) are found closed with the interior of the shells, empty. This proves that the shells had not been washed about by the currents after the animal was dead, for these shells tend to open as soon as the animal dies. The brachiopods (arm footed) are little creatures having shells which live at the bottom of the ocean, abounding at the depth of 3,000 feet, and have been found as deep as 17,400 feet in the North Pacific. The most of them live below the edge of the continental shelf, where no sedimentation or deposit of mud or sand is now going on. The shells of the brachiopods do not open after the animal dies, but when the soft part of the creature decays after death, the hole in the hinge of the shell is left open. Then the mud and sand can be washed into the empty shell through this hole. When these shells are found with the valves closed and the interior hollow, or containing small crystals of calcite, it is proof that the shells were buried while the animal was alive, or at least before the shells had been exposed to much washing or movement of the waters. These are found by the millions in various parts of the world in extensive strata. It is proof that these beds were not formed under normal conditions. When deep-sea animals such as these are found mixed up with other animals from the land, or interbedded with sandstones or other deposits which have come from the land, it is proof that the usual conditions of land and water must have been decidedly disturbed. In the depths of the ocean there are now no currents or movements of the water to disturb the softest oozes at the bottom. There must, therefore, have been a great convulsion of nature to mix these deposits with sand and gravel which are deposited as a result of land erosion. There is no land sedimentation today beyond the one hundred fathom line, or six hundred feet deep, which is from fifty to one hundred and fifty miles from shore.

We have given only a few items out of the vast amount of evidence available. But enough has been said to show that the extinct invertebrates, reptiles, mammals, trees and plants all speak with one voice, and with that voice they are trying to tell us that they did not come into being and place the stamp of their existence upon the rocks, through the ages by a long process of evolution. They are telling us with a voice which resounds throughout the world that a great catastrophe occurred which put an end to their lives and at the same time erected monuments in the fossils which shall, to the end of time, testify to that fact. With one consent they point us to the record in Genesis where we are told that at the time of the flood " the fountains of the great deep were broken up, . . . and the waters prevailed exceedingly upon the earth: and all the high hills that were under the whole heaven were covered. And all flesh died that moved upon the earth, both of fowl and of cattle, and of beast and of every creeping thing that creepeth upon the earth and every man; all in whose nostrils was the breath of life, of all that was in the dry land, died."[4]

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[4] Genesis 7.

XIII

HOW ACCOUNT FOR THE FOSSILS?

THERE are two general methods of accounting for the existence and location of fossils. The one is known as the *uniformity* theory, the other as the *catastrophic* theory.

According to the theory of *uniformity*, the continents have been slowly submerged in the water of the ocean several times through many millions of years, and the fossils have been formed by the remains of animals and plants which have been deposited in the water. These have remained there until they were covered with sediment, and were preserved as the sediment hardened into rock. This theory has been accepted by most geologists for three quarters of a century. Many have forgotten that it is merely a theory and have regarded it as an established *law*.

The theory of *catastrophism* accounts for the formation and preservation of fossils by a sudden change or catastrophe, or series of catastrophes, which took place in the earth's crust at some ancient time.

Sir J. William Dawson, late president of McGill University, and one of the most noted geologists of the latter part of the past century, said: "On the great question at issue between the 'Uniformitarians' and 'Catastrophists,' I desire to occupy a middle ground."[1] Though he believed in the geological age theory, in a modified form, he did not believe in the transmutation of species.[2] He was particularly opposed to the theory that man was evolved from the lower animals. He believed that the physical evidence from geology indicates that the world, since the appearance of man, is not more than seven thousand years old.[3] He also believed that there was no certain evidence that the movements of earth's crust, which were supposed by geologists to be slow and gradual, were necessarily slow, but that there were many geological reasons which tended to prove that these movements were often rapid.[4] He did not believe in the theory of a universal glacier, but that local glaciers, drift ice and cold northern currents may account for the phenomena usually attributed to glaciers.[5] For such facts as the following—the tissues in coal are as perfect as if formed yesterday;[6] the trunks of trees and ferns are found erect in the Devonian rocks;[7] the destruction of fishes in beds four or five feet thick "suddenly killed and embedded in the accumulating sediment,"[8] and the sudden world-wide changes of climate from temperate to arctic of which he says, "No fact is better established"[9]—he recognized that it was necessary to propose more than a theory of slow changes to explain.

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[1] *Acadian Geology*, Third Edition, p. 670.

In various publications, beginning early in the present century, and particularly in *The New Geology* (1923), Prof. G. M. Price has gone farther than Dawson and has worked out a theory of catastrophism which he believes should entirely supplant the theory of uniformism.

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[2] *Ibid.*, p. 669.
[3] *Modern Science in Bible Lands*, 1st Ed., p. 173.
[4] *Princeton Review*, Nov., 1879, p. 595.
[5] *Acadian Geology*, p. 668.
[6] *Ibid.*, p. 493.
[7] *Ibid.*, Suppl., p. 70.
[8] *Ibid.*, Suppl., p. 101.
[9] *Rights and Duties of Science*, p. 681.

Professor Price accepts the Bible record at its face value and others, who ignore it, leave out the best accredited history of the origin, life and ancient changes of the world. Sir J. W. Dawson said: " The trite saying that the Bible was not intended to teach science, is one of those superficial truths often used to cover much ignorance." He goes farther and says that it is the duty of science to teach teleology. At the close of his massive and scholarly book on geology, he says: " We are but infants in knowledge," and " we may be much aided by cultivating an acquaintance with the Maker and Ruler " of the world.

No scientist is entirely dependent upon his own observations and experiments for his conclusions. Scientists are dependent in a large measure upon recorded facts and the work of others. In other words, the scientist must be a student of history, at least so far as it affects his own branch of study. The medical student is dependent upon the study of a multitude of other physicians and the history of man. The biologist accepts the work of a host of men who have gathered information from ancient times and various localities of the world. The same is true of the student of geology. He is dependent upon the records of history, both ancient and modern. Those who have *attempted to divorce this science* from the history of the *Bible* have made a *colossal mistake*. To leave out Almighty God is to leave out the greatest fact in the world and the cause, not only of all matter and life, but also of the direction, the preservation and the cessation of that life. " The fear of the Lord is the beginning of knowledge."[10] *The written Book furnishes the key to unlock the great stone book.* To try to read the stone book apart from its Author and His revelation of the history of human and animal life ends in hopeless confusion.

This is not the place to discuss the accuracy of the Bible record. The trustworthiness of that ancient record has been proven true in a multitude of ways. Masses of evidence have been collected by leading scholars of the world, as the late Prof. W. H. Green, Prof. John Urquhart, Prof. Robert Dick Wilson, Prof. A. T. Robertson, and Prof. M. G. Kyle.

The evidence from archæological discoveries and the traditional evidence of many nations furnish strong confirmation of the Mosaic account of the Noahic catastrophe. There can be no more doubt of the accuracy of the account of the deluge of Noah's day than of the recent earthquakes in San Francisco and Japan. Geologists note carefully the history and description of these, in order to interpret the diastrophism of the earth. It is just as scientifically proper to take the history of the flood of the Bible into account to interpret the formation of fossils and rock strata.

As the result of his many years of geological study, J. W. Dawson said: " At one time, indeed, it was supposed that the geological deluge was a much more ancient event than that of Noah, but recent discoveries have tended greatly to strengthen the probability of their identity as to date. Thus geology and archæology have no alternative but to believe in a deluge of wider range geographically than we could have inferred with any certainty from the narrative of Genesis."[11] After speaking of some local subsidences, he adds: "It is, however, decidedly more probable that Noah's flood is identical with that which destroyed the men of the Mammoth age, the palæcosmic or 'palæolithic' men; and in that case the recession of the waters would probably be gradual, but intermittent, 'going and returning,' as our ancient narrator has it."[12]

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[10] Prov. 1: 7.

[11] *Modern Science in Bible Lands,* 3rd Ed., p. 141.

THE NEW CATASTROPHISM

In his *New Geology,* Prof. G. M. Price has presented an hypothesis which has taken the Biblical record into account, as well as the visible geological phenomena, and has accounted for the formation of the fossils of the earth in a manner which seems to us more simple, reasonable and historical than that which is found in any geological text-book previously published.

We should remember, however, that this theory of catastrophism is *an hypothesis and only an hypothesis.* We need to be careful not to confound it with laws or with the facts apart from the hypothesis. *An hypothesis,* if it is properly so called, is *not a mere guess.* If some one chooses one number out of a hundred, and asks another which number he has chosen, his selection in the effort to find that number is a *guess.* An *hypothesis* is more than a guess, it *has a reasonable basis in known fact.* For instance, if you are asked what kind of material extends under a house which you have not seen in building, and whose basement is covered with cement, and you look around the house and see soil on every side, and conclude that the house is built upon earth, that belief is an hypothesis. It is founded upon the visible evidence about it. Unless you search underneath the basement, you cannot be sure that there is not sand, or gravel, or even natural rock below. You have reason, however, for the hypothesis that the same material runs everywhere underneath as is found on all sides of it.

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[12] *Op. cit.,* p. 142.

The *basis*, in part, for the hypothesis of the *catastrophic theory* of the formation of fossils is the *fact of the Deluge* as recorded in the Bible. In addition to that, there is a vast amount of evidence in the fossil world of " an awful aqueous convulsion." " The general fact of a great world convulsion through which our globe has passed, a convulsion which has registered itself in the rocks of every mountain-side as well as in the strata buried deep beneath many of our most populous cities, is as certain as any other historical event—as certain as the fall of Babylon or the destruction of Carthage." [13]

There was, evidently, in the ancient world, an ideal climate. Professor Price is not alone in believing that this was true; geologists generally make a similar affirmation. The earth " once enjoyed an ideal climate from pole to pole. The corals and the coal plants of the arctic regions are objective evidence which tell a complete story that cannot be misunderstood." In order that such a climate might prevail, there must have been an ideal distribution of land and water which permitted warm ocean currents to flow into polar regions. There must also have been a heavier rainfall in desert regions than today to produce the abundant plant and animal life that is indicated by the fossils in those regions.

What was it that disturbed this ideal climate, and disturbed it suddenly? The most definite evidence which we have is the statement that at the time of the Flood, "the fountains of the great deep were broken up, and the windows of heaven were opened. . . . And the waters prevailed exceedingly upon the earth; and all the high hills, that were under the whole heaven, were covered. . . . And the waters prevailed upon the earth an hundred and fifty days."[14] There would seem to be in connection with this, violent shocks of tremendous earthquakes. Whatever natural cause God may have used at some time in the past, the axis of the earth was tilted about twenty-three and a half degrees from the perpendicular to the plane of its orbit. It is reasonable to suppose, as Price does, that this was done at the time when the ocean was thrown out of its bed and life was destroyed over the face of the earth.

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[13] *New Geology,* p. 678.

Of this, however, we are sure, that in Noah's day God visited the earth with a terrible judgment. There was the most tremendous fall of rain in all of its history, and there were mighty upheavals of the ocean bed. The earth was covered with water for five months, and it was over a year before it entirely subsided. "All the high hills that were under the whole heaven were covered." If the solid parts of the earth were leveled there is *enough water in the ocean to cover the whole globe to a depth of a mile and a half.*

With the upheaval of the ocean and the attraction of the sun and moon on the water, great tidal waves would sweep over the earth. Price quotes certain scientists to the effect that such mighty tidal waves would attain a maximum every one hundred and fifty days of about six miles in height at the equator. They would travel

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[14] Gen. 7: 11, 19, 24.

" at the rate of one thousand miles an hour at the equator, and proportionately in other latitudes, and would certainly leave no dry land anywhere on the earth, and would certainly give us a wonderfully competent cause for the production of the geological changes. And it is at least a remarkable coincidence that a period of one hundred and fifty days is twice mentioned in the Bible account of the Deluge."[15] There would be " four movements of the water each day, two flows and two ebbs. And it should be remembered that any abnormal action of the tides, while it might arise suddenly, could not subside in a similarly sudden manner, but would necessarily be prolonged through weeks or perhaps months, with all the inevitable consequences of the ocean's repeatedly transgressing over the lands, and just as repeatedly regressing from off them, and all the while performing an untold amount of geological work."[16]

1. *This will account for the sudden change of climate of which the fossils in the arctic regions testify.* " No fact," says Dawson, " is better established than that, within times geologically recent, we have had so great changes of climate that at one time the plants of warm temperate latitudes flourished in Spitzenbergen and Greenland."[17] The shore line of the continents has evidently changed so that warm currents which circulated around and warmed the polar regions were cut off or changed in their courses. If the earth was tilted, at this time, so that its axis was inclined about twenty-three and a half degrees from the perpendicular to the plane of its orbit, that would have much to do with the change of the temperature in arctic regions. It leaves

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[15] Gen. 4: 24; 8: 3.

[16] *New Geology*, pp. 683, 685.

[17] *The Rights and Duties of Science*, p. 681.

a portion of the earth's surface within the Arctic Circle without the light or the heat of the sun for several months in the year. This allows ice and snow to accumulate to such an extent that it remains cold even in the summer. But *whether we may be able to account for the change of climate* or not, the fact is clear that *there has been a change, and that change was sudden.* Though the *uniformity theory* might account for the change, it *could not account for the rapidity of it, " as of a single winter's night "* (Dana).

2. *It accounts for the alternation of deposits in which the remains from the ocean alternate with sediment from the land.* " An abnormal tidal action would seem to be exactly what is indicated by so many evidences of an alternation of deposits. For instance, in the English Jurassic, there is a repetition of the series, clay, sand and limestone, one above another; and this series is repeated no less than five times between the Lias and the Portland division of the Jurassic. Almost as regularly recurrent, and on a far larger scale of repetition, are the great coal beds, where as many as seventy-five or one hundred repetitions of the series are frequently observed. Throughout the geological series this is one of the most common of the phenomena; and it falls very approximately within the scope of the hypothetical explanation." [18]

Just what caused the accumulated sediment to harden into rocks it is very difficult to explain, but the problem is just as difficult for the uniformitarian as the catastrophist. The former has believed that it has taken millions of years for the rock to harden. That rock may be formed within a few hundred years is evident from fossils shown by Prof. Dana. One is the picture of a conglomerate " containing silver coins of the reign of Edward I, found at a depth of ten feet below the bed of the River Dove of England." Another is that of the " fossil skeleton of a man from a shell-rock of Gaudeloupe, West Indies. It is the remains of an Indian killed in battle two centuries since; and the rock is of the same kind with that which is now forming and consolidating on the shores."

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[18] *Ibid.,* 683.

3. *The theory of catastrophism accounts for the fact that fossils are found in patches.* As the great tidal waves swept forward and backward over the earth, they left the accumulations of sediment and of the remains of life which formed fossils in limited areas here and there over the globe.

4. *This also explains " why the marine invertebrates are, as a general rule, found in the lower strata of the earth, and why the larger animals, and especially the land mammals and such great reptiles as the dinosaurs, are usually found in comparatively superficial deposits."* [19]

5. *This will explain the widespread extent of the Paleozoic and some of the Mesozoic rocks which are " often a hundred or even several hundred miles in extent," while the " Tertiaries, or superficial deposits, are usually so fragmentary and in such interrupted patches here and there.* Evidently most of the former rocks were formed near the beginning of the diluvial changes; while the latter were more generally formed near the close, or as the waters were retreating from off the lands—some of them possibly years or centuries afterwards." [20]

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[19] *Ibid.,* 690.
[20] *Ibid.,* 690.

6. *This will account for the deep and regularly formed beds of rock in interior basins.* There is a large part of the surface of the earth which is " basin-shaped, with interior drainage; that is, the water drains into hollows surrounded by hills or mountains, and this water never runs out toward the sea, but stands or evaporates where it is." There is from one-fifth to one-fourth of the land-surface of the earth so shaped. When immense numbers of mollusks, corals, crinoids and foraminifers were swept into such basins, they would form deep and regularly formed beds of limestone. There are also beds of salt which might very possibly be formed from the evaporation of sea water in such interior basins.

7. *This theory will also account in a natural manner for local glaciers which seem to have been prevalent in certain localities in the past.* Price thinks that when the interior basins were full of water, and before channels were cut for drainage as at present, as in the case of the Great Lakes of North America, the water must have stood at a higher level and a much larger portion of the land have been covered with water. This would cause more clouds, more precipitation, and a larger accumulation of snow and ice. This may have extended over several years or even centuries. Sir J. W. Dawson showed that the glaciers were merely local. At the conclusion of his *Geology,* he says: " The hard-fought field of glacial denudation, striation, and boulder drift, I have traversed, . . . and have endeavored to show that the phenomena of the boulder clay and drift in Eastern America are to be accounted for, not by a universal glacier, but by local glaciers, drift ice, and the agency of cold northern currents." [21] Over a quarter

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[21] P. 668.

of a century ago, Sir H. H. Howorth collected and published a mass of material to disprove the Glacial Theory. Prof. A. H. Sayce, of Oxford University, says: "I have never seen any answer to Sir Henry Howorth's 'Mammoth,' nor do I see what answer is possible, and the same seems to me to be the case as regards Professor Price's argument."

8. *The theory of catastrophism will also account for the rocks and deposits so commonly attributed to glaciers.* The wearing and rolling of rocks may be accounted for by water just as truly as by ice. Howorth says: "Glaciers will not explain the existence of drift spread out, not in the form of moraines, but in continuous sheets, stretching over hundreds of miles of level country. Glaciers cannot, it seems to me, explain the separation of the drift into beds of gravel, of sand, and of clay; the known débris of glaciers are mixed and heterogeneous, and not separated and sorted in this fashion. Glaciers cannot explain the mounds called eskers, kames, or whalebacks; nor the long dykes called asar by the Swedes, which, in many cases, are partially stratified; nor the partial stratification, the false bedding, and the huge curving lines of deposit which the sands and fine gravels of the drift series often assume." [22]

9. *It accounts for the far-traveled boulders in the tropics where no glaciers could ever have been formed.* Howorth says: "The hottest region of the earth as known to us is probably British Guiana, yet it was there that Sir Robert Schomburgh discovered a great mass of traveled boulders, looking, he tells us, strikingly like the refuse of a smithy. This is clearly a re-

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[22] *The Glacial Nightmare and the Flood,* Vol. II, p. 774.

gion, as Murchison says, where no ice or glaciers can ever have existed." He then speaks of the boulders of Upper India and Persia, and says that there is "no other possible explanation than that they have been distributed by water in rapid movement." [23]

10. *This theory accounts more naturally, for those fossil rocks which are pitted with rain-drops and are said to help to fill the gaps in the chain of evolution, than does the theory of uniformity.* We have already spoken of a rock found near Pottsville, Pa., on which there are supposed imprints of an amphibian. "The slab on which they are impressed is ripple-marked and pitted by rain-drops, implying a freshly emerged mud-flat again covered before the impressions were lost." This fossil is supposed to fill a gap in the Subcarboniferous age.[24] Dawson speaks of finding marks of similar animals in Nova Scotia. Concerning one of them, he writes: "Rain must have fallen shortly before the animal passed over it, as indicated by the pitted appearance of the slabs." [25] In place of being evidence of animals which filled a gap in the theory of evolution, these fossils seem to show very clearly that at the time of the destruction of these animals, and at the time they were covered over by other rock-forming sediment, there was in progress a great rain which left its marks on the then soft rocks as an additional testimony to the great Deluge and the waves which carried the sediment which entombed these ancient creatures.

11. *This theory accounts, in a very simple manner, for those rock formations which have puzzled geologists and which have been designated by such names as*

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[23] *Ibid.*, p. 887.

[24] *The Dogma of Evolution*, More, p. 155.

[25] *Acadian Geology*, Suppl., p. 64.

nonconformity, deceptive conformity, and thrust faults. These names have been applied to rock strata in which the so-called older fossils are found on top and the younger rocks below. One has no difficulty of this kind who does not gauge the age of rocks by their fossils. The erosion which is also marked in these cases may be accounted for by the washing of the flood and tides.

12. *The theory of catastrophism accounts, in a more reasonable manner, for the formation of coal.* It is well known that coal was formed mainly of plant remains. Dawson made a careful microscopic and chemical examination of different kinds of coal. By the application of acids he was able to separate the mineral matter from the tissues of the plants. He found "a world of wonderful tissues in coal, as perfect as if they had only yesterday formed parts of living plants."[26]

According to some who hold the uniformity theory, the plant remains which accumulated in peat-bogs, swamps or marshes were gradually lowered beneath the surface of the sea, covered over with sediment and the remains of sea life, then elevated above the shore line and slowly consolidated into coal. According to others, vegetable matter slowly accumulated on the shore of the sea as the coast fell, and was covered over, elevated and formed into coal as in the former instance. Where there are several successive beds of coal alternating with clay or rock strata, this is supposed to have been repeated over and over. Huxley estimated the carboniferous period to have extended over about six million years. This sounds very simple, but when examined it becomes absurd.

There may have been coal beds formed when peat-bogs were covered over with clay or rock-forming sediment at the time of the Flood. But this would account for only one seam of coal. Where there are several successive beds of coal this does not account for them. Perhaps they were formed by the flood and tides sweeping abundant accumulations of vegetable matter, the dead and green together, into lakes or valleys. "The coal beds themselves are found in what seem like a series of disconnected basinlike areas" (Price). Other tides from the sea would cover these plant remains with sand, clay, and the remains of sea life. With the tides sweeping backward and forward, this would be repeated time after time until many layers of vegetable matter would be covered over, which, as time passed, would be pressed down into successive beds of coal.

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[26] *Acadian Geology,* p. 493.

There are a great many things in connection with the coal beds which may be accounted for very naturally in harmony with this theory, but which do not harmonize with the uniformity theory.

Coal beds could not have been thousands or millions of years in the process of formation, else they would not contain tissues of plants as perfect as if they had been living yesterday.

If ages of time had elapsed between the formation of successive beds of coal, we would not find fossils of a similar character scattered through them. Nor would we find fossil trees extending through several overlying strata. In a colliery near Newcastle, England, a fossil tree was found reaching through ten distinct overlying strata. How could this tree have been preserved through hundreds of thousands of years while the land was slowly subsiding into, or rising above, the sea?

There are many coal beds which rest directly "on sandstones, limestones, conglomerates, or even on igneous rocks." This luxuriant vegetation of a swamp or bog could not have grown upon these rocks. Sometimes there are thick beds of coal overlying thin underclays. Often this clay is only one, two, or three inches in thickness. How could it have supported a heavy growth of vegetation?

If the vegetable accumulation of a bog or swamp were slowly lowered into the sea, there would be a long period of time when it would constitute the ocean beach. With the waves and tides working upon it, it would surely be torn and scattered in all directions. We need to remember that it takes ten to fourteen feet of vegetable matter to make one foot of coal. Suppose we have a bed of coal forty feet thick, the accumulation of vegetable matter would need to be over four hundred feet thick. Could such an accumulation of plant remains lie on the seashore for centuries without being scattered far and wide? Or suppose this ancient bog was immersed suddenly beneath the sea by an earthquake, is it reasonable to suppose that this could occur over and over for more than one hundred times, while the beds all remain parallel and the alternating rock strata undisturbed? In Nova Scotia, there are seventy-six, in England eighty-seven, and in Westphalia one hundred and seventeen successive seams of coal.

In some kinds of coal, vast numbers of fish have been entombed, and it is evident that fish cannot live in a bog or swamp. Between the beds of coal there are often found various kinds of marine life, as crinoids from the deep sea and corals from the clear water of the ocean. These facts indicate an abnormal action of the water. The theory of catastrophism accounts for the fact that thick beds of coal often split up into a number of smaller seams at a distance from the main bed. It accounts for the fact that millstone grit is frequently found below coal beds, which indicates a violent and rapid action of water. It accounts for the fact that the coal beds of the Cretaceous and Tertiary formations are formed chiefly of plants and trees, most of which do not flourish in swamps or bogs. There are in the Upper Cretaceous such trees as the sequoia (like the big trees of California), maple, chestnut, elm, tulip tree, and poplar whose natural habitat is high ground. The study of the coal beds alone should convince men that the theory of uniformity should be abandoned.

13. *There are vast deposits of mud, called in German "The Loess," which extend all over the center of Europe, with similar deposits in other continents, which testify to the action of an ancient flood.* It covers the whole valley of the Rhine and covers the hills to a height of 1,600 feet. Similar mud beds are found in Argentine. Darwin called it Pampas mud. It is found also in Brazil, Bolivia, Australia, Siberia, North America, and elsewhere.

14. *This theory accounts for large areas of gravel beds which lie on elevations where no river has ever flowed.* Such gravel beds are found in various places in England, and all over Europe. Darwin found them in various places in South America extending for hundreds of miles. In some places these beds were more than two hundred feet deep, and if piled into a mound, he said, "would form a great mountain chain." Howorth says: "Misleading as I deem the arguments of Lyell and his scholars to have been when applied to the older beds, they were much more so when applied to explain the superficial mantle of gravel, clay, sand, etc.,

which covers the ragged and ruined surface of the older rocks, and gives to the earth its generally smooth and undulating outline." He attributes such phenomena to the Flood of Noah's day.

15. *The hills of sea shells in South Sweden add a remarkable testimony to the reality of the great Deluge.* Howorth gives a vivid description of them. After quoting a description given by Linnæus, which tells of the distance of these hills from the sea, and of their great size and extent, he says: "To find shells of the most fragile nature, perfectly preserved, heaped up in this fashion many feet thick, with hardly any mixture of sand or shale, quite heterogeneously, the species being mixed together in most admirable disorder, those from deep water being mixed with those which are purely littoral, . . . this is a very puzzling assemblage." His conclusion is that they were transported there by the flood. A large amount of proof with regard to these matters may be found in Howorth's *The Glacial Nightmare and the Flood*, or in the first volume of Urquhart's *New Biblical Guide*.

16. *This theory is consistent with the apparent youth —from the geological standpoint—of the mountains.* "The upheaval of practically all the mountain ranges must have taken place since the burial of the fossils; that is, since thousands of living species of plants and animals, including man himself, came upon the earth."[27] "The rocks everywhere present the clearest evidence that the most of the folding and tilting of the rocks occurred while the beds composing them were still soft."[28] "Evidently a mountain could not be formed until after the strata composing it were laid

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[27] *New Geology*, p. 677.
[28] *Ibid.*, p. 691.

down by the water. For example, if Eocene strata are found anywhere on the top or on the flanks of a mountain range, the making of this mountain must be postponed until after the Eocene ‘ period,’ much as the evolutionists would like to have this mountain-making out of the way as early as possible on the geological program. Unfortunately, however, almost all the mountains contain strata so very astonishingly ‘ young ’ that practically all of the mountain-making of the world must be postponed until almost the very close of the entire program, and then all take place practically at once! This is a very awkward situation, to be sure; but it cannot well be helped. I cannot find any very recent text-book of geology which has practically anything to say on this matter; it is a most embarrassing subject. . . . No wonder Dana says that this late date of the mountains is ‘ one of the most marvelous in geological history.’ ”[29]

17. *This theory is in entire harmony with the metamorphic appearance of many of the rocks of mountains.* There would be a great amount of heat developed in the breaking and crushing of the rock when the mountains were formed. This would give the rocks a crystalline appearance, regardless of age, stratification, or the fossils which they may have originally possessed.

18. *This theory is in harmony with the probability that there was greater volcanic activity in ancient times.* This does not mean that the earth was formerly molten in the interior; that theory has been disproved and abandoned. Prof. Price “ averaged the five hundred odd observations recorded by Prestwich in his discussion of this subject (underground heat), these

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[29] *Ibid.*, pp. 658, 659.

observations being all the reliable temperatures taken in mines, artesian wells, etc., which this author could find recorded; and it turns out that the average of all these recorded temperatures is only 69.23 F., which is *not higher than the average surface temperature must have been* when most of the fossiliferous strata were deposited "[30] The friction attending the making of the mountains would account for the origin of the combustion of carboniferous material. This in contact with oxygen-producing rocks and a plentiful supply of water to form steam would account for the eruption of volcanies. Water converted into steam has five times the expansive force of gunpowder. As for the continuation of underground heat, the Summit Hill mine, in Pennsylvania, has been burning for over sixty years, and some lignite coals along the Mackenzie River have been burning for one hundred and thirty-five years.[31]

19. *This theory will account for the marked erosion of the mountain-tops.* With the earth covered with water and great waves sweeping over it, the hill and mountain-tops, or those portions of land nearer the surface, would be washed more than that which was covered more deeply. When in the San Luis Valley, in Colorado, the writer often noticed the rocks of the mountains which had the appearance of having been washed with waves of the sea. Fish remains were found in the rocks of the surrounding mountains. Those who lived there held the theory that this valley had once been a great lake which was drained by the Rio Grande River. These phenomena may be explained without difficulty in view of the great Deluge.

20. *We may also account, in harmony with this*

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[30] *Ibid.,* p. 32.

[31] *Ibid.,* pp. 233-236.

theory, for the formation of great gorges in the rocks which geologists have estimated to be millions of years old. The rock, younger and probably softer after the Flood, would wear down more rapidly. The vast amount of water draining off from interior basins would do an untold amount of geological work. Dawson accounts for the cutting of the Niagara gorge in about seven thousand years.

After showing that Niagara Falls retreats at the rate of about three feet each year (some calculate the rate to be as high as five feet per year), he says: "It is a matter of easy calculation that at this rate the excavation of the present gorge would occupy about seven thousand years, instead of thirty thousand estimated by Lyell on a supposed rate of one foot per annum. But even this estimate admits of probable reductions. The early modern period was one of greater rainfall than the present."[32]

21. *It accounts for interior salt lakes in land basins, as the Great Salt Lake and the Dead Sea.* It also accounts for the marine life or remains which are found in inland seas or lakes. The waters of the Caspian Sea "are chemically very like the ocean, so far as their dissolved salts are concerned. And its fauna bears distinct evidence of a former but recent mingling of the ocean with its waters; for it includes salmon, herring and other ocean fish, with even porpoises and seals. . . . Lake Onondaga, once a part of Lake Ontario, contains marine squids; while around Lake Champlain are elevated beaches containing very numerous marine shells, with bones of seals and whales. Still more interesting are some of the inland waters of the tropics, such as

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[32] *Modern Science in Bible Lands,* 1st Ed., p. 173.

Lake Tanganyika, in Central Africa. Here are found jellyfish, marine gastropods, with other marine organisms."[33]

22. *What other than such a terrible and sudden catastrophe as the Flood can account for the destruction of fish over vast areas, and this including great numbers of the largest denizens of the sea.* Dawson describes a stratum of rock in New Brunswick which contains an interesting collection of fish remains, and is four or five feet thick. In describing them, he says: "The whole of these fishes have been preserved entire; their bodies being perfectly flattened, and thrown into attitudes which imply that they were embedded when living or immediately after death. The material in which they are contained is shown, by its microscopical and chemical characters, to have been a vegetable muck or mud, and the fish . . . were suddenly killed and embedded in the accumulating sediment."[34] When speaking of the destruction of fish in Scotland, Hugh Miller marveled at the "innumerable existences of an area perhaps ten thousand miles in extent annihilated at once." We have already spoken of other instances of the sudden destruction of fish, together with the evidences of the destruction of great numbers of whales along the borders of the Gulf of Mexico.

23. *This theory accounts for countless millions of deep-sea animals, such as mollusks, brachiopods, etc., whose shells indicate that they were entombed while still alive.*

24. *The heavy and prolonged rain, together with the fact that the earth was covered with water, accounts for remains of birds which are mingled with the animals*

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[33] *New Geology,* pp. 583, 584.

[34] *Acadian Geology,* Suppl., p. 101.

of the earth. This agrees with the record in the Scripture which says that the fowl of the heaven were destroyed from the earth.[35]

25. *This theory accounts not only for the sudden destruction of the Siberian Mammoths, and for the great masses of remains of other huge creatures like the dinosaurs, but also for the intermingled masses of fossils of large and small, herbivorous and carnivorous animals together.* Of the bone-caves of the South of Europe, the Duke of Argyll said: the caves were "packed from floor to ceiling with a breccia, mainly consisting of skeletons of the great Pleistocene Mammalia of the rhinoceros, the hippopotamus, the mammoth, the lion, and the large associated graminivora. Chiefly in the countries bordering on the Mediterranean, such caves have been found in abundance, containing such a mass of animal remains that it is certain that no agency but that of water could have brought them and huddled them up together in such heaps at one spot." Of the Bone-Cabin quarry of Wyoming, Prof. H. F. Osborn says: "We came across a veritable Noah's Ark deposit, a perfect museum of all the animals of the period. Here are the largest of the giant dinosaurs closely mingled with the remains of smaller but powerful carnivorous dinosaurs which preyed upon them."

26. *It accounts for the fact that so many fossils of animals are found on higher ground, where they seem to have fled to escape the water.* In his hypothesis, Price says: "It took six weeks for the waters to attain their maximum, evidently by terrific cloud-bursts and by enormous ebbs and flows of tides, the latter rising a

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[35] Gen. 7: 23.

little higher each day over the ever-narrowing lands, driving the men and animals before it, until, after over a month of this agony long drawn out, those who still survived looked out from their pinnacles of mountain-tops over a shoreless ocean."[36] "There are two remarkable cases which bring before us all the pathos of that day of terror. The cave of Santenay, in Burgundy, is situated on an isolated plateau, with steep flanks on all sides, rising to a height of several hundred feet above the plain. The animals had evidently fled to this elevation for safety, panting up the steep acclivity, and seeking refuge at last in the cave. The only agency which could have slain them there, and washed their bones into the crevices in which many of them are now found, was some mighty inundation great enough even to cover that place of fancied security. The other case is described by Spallanzani. In the island of Cerigo, near Corfu, there is a barren mountain, which 'is a mile in circumference at the base, and from its base to its summit is covered with bones both inside and out.' It is called 'the mountain of bones.' The animals had fled thither in the vain hope of escape. The fleeter, which had fled higher, were overtaken as surely as those which succumbed earlier. The tale told by the caves is too plain to be misread. They speak of one flood, and of one flood only."[37]

27. *This theory harmonizes with the fact that the fossils of animals which lived before the flood were larger than those which exist at present.* The creatures which came more directly from the hand of the Creator were larger and of longer life before the curse of sin had caused so much degeneracy. The dinosaurs were ap-

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[36] *New Geology,* p. 688.

[37] *The New Biblical Guide,* Vol. I, pp. 364, 365.

parently very old. The Cro-magnon man whose teeth were worn down was manifestly very old. When foretelling the flood, God said that the age of man would be limited to " an hundred and twenty years."[38]

28. *This theory accounts for the burial of giant men and the covering of loess which has been found over some of them.* It accounts for the deep burial of either human or animal remains, as in the case of the Heidelberg Jaw.

29. *This theory will explain the deep burial of human instruments such as eoliths, and for the mixture of these with the remains of extinct animals such as the rhinoceros and the mammoth.* It is from the stone instruments, called *eoliths,* that we get the name *Paleolithic,* or, *age of early stone instruments.* J. W. Dawson was opposed to the term paleolithic, and used in its place the term, palæcosmic. " The inhabitants of Egypt were acquainted with bronze and iron long before the date of the Exodus, yet the Egyptians used stone knives for some purposes up to a comparatively modern time. . . . If any antiquarian were to stumble on the ' hill of the foreskins '—a mound under which were buried in all probability the multitudinous flint flakes used in the circumcision of the thousands of Israel . . .or the grave in which some of the Ethiopian auxiliaries of Xerxes were buried with their flint arrowheads and javelins of antelopes' horns, how absurd would be the inference that these repositories were of the palæolithic age. Nay, so late as 1870, a traveler was informed that the Bagos, a people of Abyssinia, still made and used stone hatchets and flint knives.

" In Europe, we find reason to believe that the Ligurians of Northwestern Italy were flint-folk of very rude type until they were conquered by the Gauls about 400 B. C. . . . All over the more northern parts of Europe there is the best reason to believe that the use of stone and bronze continued to a much later period, and locally until long after the Christian era. It is clear that such facts as these . . . should induce the greatest caution in claiming any special antiquity for particular classes of implements." [39] Then he shows from the excavations of Troy that relics and instruments have been found, at different depths below the surface, which correspond with all the ages which are called prehistoric, but were used within the historic period of that ancient city.

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[38] Gen. 6: 3.

30. *This theory is confirmed by the fossil or archæological accounts of the Deluge.* Some fossils tell a story of the Flood, not in a mute language as that of the "Siberian Mummies" or mammoths, but in a written language which is now well understood. The traditions of the Chinese, Malays, Persians, Babylonians, Chaldeans, Egyptians, Phrygians, Aramæans, Greeks and Romans, while not so clear or accurate as the account of the Bible, yet contain a remarkable confirmation of the truthfulness of the Scripture record. A tradition of the Flood is common among modern and even American nations, such as the Mexicans, Crees, Cubans, Brazilians, Athapascas, Iroquois, Cherokees, Chickasaws, Aztecs, and many others.

That the many languages of all these peoples can be traced by philologists to a few original forms is an additional testimony to the reality of the Deluge. One can scarcely separate the account of the Flood, as found in the Bible, from the effort of the post-diluvian people to avoid the results of another deluge, and the manifestation of Divine displeasure in confounding their language. This also helps to explain the fact that some of the most ignorant races speak languages which are very complex. Dr. Edwin Sapir said: " It is indeed one of the paradoxes of linguistic science, that some of the most complexly organized languages are spoken by so-called primitive peoples, while, on the other hand, not a few languages of relatively simple structure are found among peoples of considerable advance in culture. . . . In complexity of form, the Eskimo language goes far beyond the English." [40]

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[39] *The Origin of the World,* Dawson, pp. 281, 282.

This also helps to account for the difference of the races of men as they appear in the world today. Groups of men were isolated because they could not speak the same language. Mendelism accounts for vast changes in a group, pair or of individuals who are isolated and prevented from inter-breeding with others who may differ from them.

31. *This theory harmonizes with the testimony of the fossils concerning the fixity of species.* We have shown that " the evidence from paleontology is for discontinuity; only by faith and imagination is there continuity of variation " (More). J. W. Dawson says, in the " Conclusion " of his *Geology,* that he has *not been able to find " any evidence of the gradual transmutation of species by natural selection or any other cause."*[41] This confirms the findings of Prof. William Bateson in his study of biology, of the fixed nature of species. The species of plant and animal life were created by God, and the fossils which we find are not

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[40] *Smithsonian Institution Report,* 1912, p. 573.
[41] P. 669.

remnants of evolving life, but monuments of the greatest catastrophe in the history of the world.

32. *This theory accounts for the universal distribution of fossils.* There are many who, in trying to harmonize the Bible with theories of science, have held that the Noachic Flood was more or less local. While Sir Henry Howorth did not affirm that the Deluge was universal, his testimony of finding evidences of it in almost every part of the world causes one to wonder where it did not leave its marks, even in the superficial deposits due to its work. He gives evidence of its work in Europe, Siberia, China, India, Africa, Australia, New Zealand, the West Indies, Asia Minor, and North and South America. In addition to this, we may say from the general evidence before us that practically all fossils testify to its destructive action. The testimony of Moses is very clear: " The waters prevailed exceedingly upon the earth; and all the high hills, that were under the whole heaven, were covered."[42]

There are a multitude of additional facts which harmonize with and support the hypothesis of catastrophism. It would take a whole book on geology to give a summary of them. Anyone who desires additional evidence may find it on almost any page of G. M. Price's *New Geology*—a book of 726 pages. This author says, near the close of his book: " I quite sympathize with anyone who stands dazed at the magnitude of the processes represented in any of these phenomena (The Grand Canyon, Niagara, mountains, etc.), and at the length of time necessary to explain them on the basis of the present action of the forces of nature. But I have scant sympathy with anyone whose mind is so constructed that he can go on complacently teaching the same old doctrinaire theories regarding the precise kinds of animals which lived in a certain age of the world, and who can continue to construct genealogical trees of descent for the horse, the elephant, the camel, and what not, in view of the evidence which is now at our disposal."

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[42] Gen. 7: 19.

Sir J. W. Dawson said concerning such theories as "the spontaneous origin of living beings from dead matter and the production of species by natural selection, phylogenies of imaginary genealogies based on conjecture, and doctrines as to the antiquity and brute origin of man," though he could tolerate them as mere speculations, "when introduced in text-books and popular publications, they constitute treason against the majesty of truth, and entitle their promulgators to nothing less than banishment from the fair fields of science."[43] As a mature conclusion of this great scientist, only four years before his death, he affirms: "The general reader may now be satisfied that geological investigation has finally taken its place along with sacred history in the vindication and illustration of the much-controverted and much-ridiculed flood of Noah."[44] In another volume, concerning the history of Genesis, he says: "The meaning of these words is always a meaning ahead of science—not because it anticipates the results of science, but because it is independent of them, and runs as it were round the outer margin of all possible discovery."[45]

The Nebular Hypothesis was accepted for many years by almost all scientists. There were, however, a few exceptions to it which finally caused them to reject it. There are many more exceptions to the Uniformity theory of the evolution of the world. Some of those exceptions have just been presented. *A scientific law must not have a single exception.* Scientists will surely reject this theory eventually, as some have already done.

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[43] *The Rights and Duties of Science,* p. 691.
[44] *Modern Science in Bible Lands,* Preface to Third Edition, p. 8.
[45] *The Origin of the World,* p. 4.

There are men like David Hume who will not be convinced of a miracle by any amount of evidence. They will not likely be convinced by the evidence of a world catastrophe. On the other hand, there are men who, like Louis T. More, of Cincinnati University, believe that: " To admit the existence of God in any sense of the word is to admit the possibility of the miraculous. To say that natural law was instituted by a Power and to deny that natural law may be suspended or changed is to accept the greater mystery and to deny a less. If God instituted the laws by which the solar system moves, then I see no reason, so far as physics is concerned, why the sun may not have stood still at the command of God through Joshua. To say that it would have deranged the solar system is an argument which should have no more weight than to say that a man who had made a machine could not stop it and start it again without deranging its mechanism."[46] It is as easy to believe in the Deluge as in the being of God or in any miracle in the Bible. *The man who believes firmly in the record of the Word of God may be temporarily condemned by those who advance scientific theories, but eventually he will be vindicated by those who have discovered scientific facts.*

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[46] *The Dogma of Evolution,* p. 357.

XIV

THE HARMONY OF THE TWO BOOKS

WE have seen that the Written Book furnishes the key to unlock the great stone book; that to try to read the stone book apart from its Author and the history which He has revealed concerning the origin of the world, and the life which appears upon it, ends in hopeless confusion. We have seen that the Noachian Deluge enables us to account for the fossils which are found in the rocks throughout the world.

THE STONES CRY OUT

The Biblical history of the Deluge not only records the fact of the general destruction of life, but it gives a moral reason. It informs us that it was a judgment of God which was sent on account of the sins of the world. Therefore, *every fossiliferous rock is a monument of a ruined world and a warning against sin.*

A cartoon appeared recently, in one of the popular magazines, of a large pole supporting a wrecked automobile by a railway crossing. Such an exhibit would be a striking monument to warn all automobile drivers to beware of trains at crossings. So in every rock which contains fossils there is a reminder of the destruction of the inhabitants of the earth by a great deluge and a warning against the results of sin.

If, in making excavations, men should dig up an old battlefield and find bones broken, punctured with holes, arms gone, legs missing, and skulls shattered, they would naturally exclaim, " Oh, the awful results of war! " When men see rocks that are filled with fossils and think of the antediluvian world, of its wickedness and of its judgment, they should exclaim, " Oh, the awful results of sin! "

The rocks tell a story which, when placed side by side with the record of Genesis, is so plain that we wonder that it has been so often misread. They tell a story of a world that has been inhabited by great animals and large men. They tell of great fishes of the sea, huge mammals of the land, and great birds of the air which were larger and more powerful than any of which we know today. They tell of vast areas once teeming with highly-developed plants and animals which are now bleak seas of ice or barren desert. They tell of wombats as large as an ox, of turtles nine feet in length, of elephants twenty feet long, of dinosaurs eighty-seven feet in length, of bears, lions, deer, rhinoceroses, hippopotamuses, and of practically all other animals which were larger than their now living representatives. In addition to this, they tell us of giant races such as the Cro-magnon men, larger than the average man of the present age. No wonder that Sir J. W. Dawson said, when comparing the past with the modern world: " We may almost say that all things left to themselves tend to degenerate, and only a new breathing of the Almighty Spirit can start them on the path of advancement."

Why, then, is there a difference of interpretation of these facts? Why do so many men think that they see proofs of evolution, or a steady march of all things upward? Principally *because of their misinterpretation of the phenomena of geology.* We have seen that the biologist, the psychologist, the anthropologist, and other evolutionists all go back to the mysterious abyss of ancient time and invoke the fossil world to confirm themselves in their theories, and that their evolution theories are based upon an artificial and unsubstantiated conception of geology. Moreover, *evolutionists have not taken into account,* in a proper manner, *the results of domestic care and training.* Almost all kinds of plants and animals and fowl have been developed under the care of man. Thus man, under God, has been able to bring about a partial recovery of domestic creatures from their degenerate state. This has not resulted in producing new species, or changing them permanently, for if left to themselves they would degenerate rapidly again. *God's original production was better than man's reconstruction* can ever be. Evidence of this fact is registered in the rocks all over the world.

WHY INJECT MILLIONS OF YEARS?

Why should men desire to inject millions of years into any place in the Divine Record? Men used to think that they had to insert millions of years into the second sentence of the Bible in order to account for the origin and orderly arrangement of *matter.* They were then influenced by skeptics who had advanced the Nebular Hypothesis in order to account for the formation of the earth without God. Even devout theologians accepted it. But now scientists upon purely physical grounds have been forced to abandon this theory. Still men think that they have to extend the record of creation for millions of years in order to account for the *varied forms of life* which now exist in the world. Skeptics cannot accept God and special creation, so they have supposed that somehow nature could perform the work of creating species if allowed millions of years in which to do it. But while Darwin was theorizing with the idea that nature knew nothing but a hit-and-miss method of ordering new generations, Mendel was proving that nature works on a mathematical plan in her rules of heredity, and that this extends through all the higher forms of plant and animal life, so that there is no crossing over from one type to another. And now William Bateson comes forward and confirms Mendel's findings by saying: " That particular and essential bit of the theory of evolution which is concerned with the origin and nature of species remains utterly mysterious. . . . Variations of many kinds, often considerable, we daily witness, but no origin of species. . . . We no longer feel as we used to do, that the process of variation, now contemporaneously accruing, is the beginning of a work which needs merely the element of time for its completion; for even time cannot complete that which has not yet begun."[1] Millions of years therefore, are of no avail in producing new phyla, genera, or even species. There is no need for, and no adequate scientific reason why we need to insert millions of years anywhere in the record of creation.

As the noted geologist, Sir J. W. Dawson, stands looking at the gorge of Niagara, that great geological time-gauge, he concludes that the time since man and the higher mammals appeared upon earth has been about seven thousand years.[2] And as Prof. G. M. Price stands upon a mountain-top and surveys all the phenomena of geological formations, he concludes that the world is not older than the few thousand years indicated by Moses in the inspired Record. Dawson says: " Even evolutionists, when sufficiently candid, admit their case not proven by geological evidence, . . . and fall back on periods of rapid paroxysmal evolution, or 'metamorphosis,' as it has been called, scarcely differing from the idea of creation under law, or mediate creation."[3] Why, then, shall we, in order to satisfy the imaginings of men who wish to eliminate all miracles and unusual phenomena inject millions of years into the Divine record?

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[1] *Science,* January, 1922.

[2] *Modern Science in Bible Lands,* 1st Ed., p. 173.

UNDERLYING SKEPTICAL PHILOSOPHY

Skepticism has always rebelled against the miraculous in history. The Sadducees, who were the skeptics of their day among the Hebrews, rejected the idea of the miraculous. They deliberately rejected the evidence, and persistently refused to accept the fact of the resurrection of Christ. As they were in power, the subject of the resurrection became the center of conflict in the early apostolic Church. They tried by ridicule and brutality to silence the teachings of the resurrection. The skeptical philosophers among the Greeks also rejected the miraculous. When Paul, in Athens, preached the resurrection to the Epicureans and Stoics, some sneered, some mocked, and some politely dismissed themselves from his audience. The rejection of the miraculous in the creation or in the Deluge is simply another manifestation of skepticism in the present age. We do not affirm that all men who believe in a measure of evolution are skeptics, but the theory comes from a skeptical philosophy of the world, and Christians should guard themselves against being influenced by it. The Christian can be certain that spontaneous generation and perpetual motion will never be discovered, because both the origin of life and the source of everlasting power are from God.

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[3] *Modern Science in Bible Lands,* p. 85.

When Dr. Len G. Broughton was a medical student, he could not accept the supernatural generation of Christ. He went to a doctor of divinity, who reasoned with him and left him in greater perplexity than ever. When he had completed his medical education, he went to a backwoods community to begin his practice. He tells us that a backwoods preacher, in a morning sermon, knocked out more skepticism in a half hour than he had gotten in three years. The preacher said: " If there is anybody here troubled about the mystery of God becoming man, I want to take you back to the first chapter of Genesis and the first verse. ' In the beginning God.' My brother, let me ask you this: do you believe God was in the beginning? That is to say, that before the beginning began God was? " Dr. Broughton said to himself: " Yes, I believe that." " Now," continued the preacher, " if you believe that God was ahead of the beginning, you believe the only mysterious thing of this universe. If I believed that, God knows I could believe anything else in the world." After relating this, Dr. Broughton adds: " I had gone to college and traveled through the mysteries of the theory of reproduction and cell formation, and had come to realize that I was just a common fool; that if God was in the beginning, that was the one supreme mystery of all mysteries of this mysterious universe of God."

MATERIALISM

The ancients were not materialists. The savages are not materialists. Materialism is the product of modern agnostic philosophy. Sir Arthur Keith says of " the

Neanderthal man," that "he buried his dead and had certain beliefs regarding death."[4] The ancient Egyptians were not materialists. In a book, entitled *The Religion of the Primitives,* Mr. LeRoy, the author, tells us that he was a missionary for many years among the so-called primitives of Africa. When he began his work there he held the usual evolutionary idea that these black people were fetichists, without religion or morality, with no family life, stupidly adoring animals, trees and stones. After spending more than forty years among these "primitives," he says: "These primitives or savages that your theories require do not exist anywhere and perhaps never have existed; at any rate, it is impossible to discover them either in the present world or the past." He shows that the representations concerning them, in the effort to point out that they have no religion, are incorrect and largely imaginary.

The philosophical scientist cannot prove our ancestors or our contemporaries among the savages to be materialists. He will have to take the blame for the promulgation of that idea to himself. But what has the avowed materialist gained? He has gained nothing and has lost much. Darwin, who at one time studied to be a leader in the Church, drifted so far that even in some of his correspondence he became profane. He lost interest in the arts and literature. "He mourned because his mind was weak and dizzy; and he became morbidly apprehensive lest his children were, by heredity, doomed to the same fate. He gradually lost pleasure in most phases, even, of his work."[5] John Stuart Mill was an evolutionist. He thought that he had found a moral code to benefit mankind, but directed his friends to write on his tombstone the words, "Most Unhappy." That is the natural end of the man who eliminates God from his thought and life. Dr. William M. Taylor once spoke of having read the biographies of John Stuart Mill and Dr. Thomas Guthrie at about the same time. He said the former was sad and morose, while that of the latter was buoyant, cheerful and uplifting.

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[4] *The Antiquity of Man,* p. 131.

[5] *The Dogma of Evolution,* pp. 190, 228.

The Psalmist said, "The fool hath said in his heart, there is no God."[6] He is just as much of a fool who denies God in his heart as he who boasts of his infidelity. The scientist who deliberately rules God out of all consideration, and presumes that he can find the origin of life or the evolution of all life without God, rather than being one of the wisest men of the earth, is properly characterized by the Psalmist. Sir Isaac Newton, in his early life, was an outspoken infidel, but later, after examining the evidences of Christianity, changed his opinion. When Dr. Halley was arguing in favor of infidelity before Newton, the latter said: "Dr. Halley, I am always glad to hear you when you speak about astronomy or any other parts of mathematics, because that is a subject you have studied and well understand; but you should not talk of Christianity, for you have not studied it. I have, and am certain you know nothing about the matter."

"You cannot put one little star in motion,
  You cannot shape one single forest leaf,
Nor fling a mountain up, nor sink an ocean,
  Presumptuous pigmy, large with unbelief!
You cannot bring one dawn of regal splendor,
  Nor bid the day to shadowy twilight fall,

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[6] Ps. 14: 1.

Nor send the pale moon forth with radiance tender:
And dare you doubt the One who has done it all?"

CHANGING THEORIES

If we look over the history of science, we cannot but note the fact that its theories are constantly changing. Prof. Frank Allen, head of the department of physics of the University of Manitoba, said to the writer recently: "*There is scarcely a theory of science which is generally accepted today, of which I would be ready to affirm that it may not be abandoned within a few years. Nearly all of the theories which were regarded as satisfactory a few years ago, are now either modified or discarded by scientists.*"

THE IMPREGNABLE ROCK

The repeated abandonment of scientific theories and the ever-increasing knowledge of the authenticity of the Word of God, should teach all Christians to accept the Scripture at its face value, and, even though portions of it are assailed by skeptics and "scientists falsely so called," to await with unshaken faith the day when the hidden things shall be made known, and it shall be evident that God has revealed through inspired writers that which is forever true. The Hon. William E. Gladstone called the Bible "the Impregnable Rock of Holy Scripture." Many facts from archæology, geology, biology and philology have been discovered since his day to substantiate the splendid argument which he produced. Sir William J. Dawson recorded a truth which will be remembered long after a multitude of skeptics and pseudo-scientists have been forgotten, that "Genesis stands alone among the traditions of mankind in the wonderful simplicity and grandeur of its words," and that "the meaning of these words is a meaning ahead of science, . . . and runs as it were round the outer margin of all possible discovery."[7]

GOD ALWAYS FIRST

If we accept the Word of God and make an honest interpretation of it, we must recognize God in the creation of matter, in the creation of life, and in the creation of all kinds of life. This is the fair, the logical, the Christian conclusion. The atheist builds his world without God, the deist with God looking on, and even self-styled theists of the present day often regard God as having nothing more than an indifferent oversight of the progress of the world. The latter is not a true theist, nor does he give God His full and rightful place in the world. A man who is a materialist or a deist should be willing to be designated as such. One should not profess Christianity in the Church and materialism in science. The Christian should give God, not the least place, but the largest possible place in the creation and life of the world.

GOD JUDGES SIN

Against the sin of atheism, materialism, skepticism, deism, and all the wickedness, corruption, immorality and violence which follows, God is testifying today in every fossiliferous rock of the world. These and a multitude of other sins provoked the wrath of God against the antediluvian world. To hold the theory of spontaneous generation, and the brute origin of man is to rule God out as the great and sole Creator of all things, and it was ruling God out which was the underlying sin of the antediluvian world. When, therefore, you observe a piece of chalk, coral or crinoidal limestone, amber, coal, carbonaceous shale, millstone grit, or other fossiliferous rock, you have before you a monument of God's judgment because of sin.

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[7] *The Origin of the World,* p. 4.

When God made a covenant with Noah, He promised not to destroy the earth again with a universal deluge. But God did not reverse His attitude toward sin. Though He recognized that " the imagination of man's heart is evil from his youth," He promised that He would not curse the ground any more for man's sake, nor smite again every living thing as He had done. That so long as the earth remained, seed-time and harvest, summer and winter should not cease. God has kept His promise, but through four thousand years of succeeding history He has made clear by precept and example that He cannot tolerate sin, and that He will judge men for it. His wrath burns against sin just as strongly as it did in antediluvian times. " God is angry with the wicked every day."[8] After naming a number of prevalent sins, Paul said to the Ephesians: " Let no man deceive you with vain words: for because of these things cometh the wrath of God upon the children of disobedience."[9] Jesus Christ points out a day when He shall judge the wicked—among them many outwardly moral men—and when they shall be condemned forever.[10] When walking among the stones of this earth, Jesus replied to those who criticized His disciples for praising Him: " If these should hold their peace, the stones would immediately cry out."[11] That would have been a testimony from the rocks against a sin of omission, but the rocks are crying out every day against sins of commission. Their fossils are warning us against the sins of the antediluvian world, violence, drunkenness, impurity, rejection of God, and other sins of which they were guilty, which are no doubt similar to the sins of the world today. This may help us to understand why men shall one day call to the mountains and to the rocks to fall on them and to hide them from the wrath of the Lamb.[12] They have failed to accept the testimony of the rocks and forsake their sins. Dives wanted Abraham to send a messenger from the dead to warn his brethren lest they should go to the place of torment as he had done. God sends a messenger from a world which was cut off on account of sin when He sends us to look upon the fossils of the ancient world.

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[8] Ps. 7: 11. [9] Eph. 5: 5. [10] Matt. 25: 31-46. [11] Luke 19: 40.

CHRISTIANITY AND PROGRESS

If we accept the teaching of the Bible in its fulness, and receive seriously its warning against sin, this does not mean that we are ready to block the progress of science or scientific investigation. Christianity welcomes investigation. Those who investigate it and are convinced do not become worse, but better scientists and students of literature. Dr. D. J. Burrell gives us an illustration of this fact. " Two infidels once sat in a railway car discussing Christ's wonderful life. One of them said, ' I think an interesting romance could be written about Him.' The other replied, ' And you are just the man to write it. Set forth the correct view of His life and character. Tear down the prevailing sentiment as to His divineness and paint Him as He was—a man among men.' The suggestion was acted on and the romance written. The man who made the suggestion was Colonel Ingersoll; the author was General Lew Wallace; and the book was *Ben Hur*. In the process of constructing it, he found himself facing the unaccountable Man. The more he studied His life and character, the more profoundly he was convinced that He was more than a man among men; until at length, like the centurion under the cross, he was constrained to cry, 'Verily, this was the Son of God.'" Lew Wallace, by reason of his investigation, became a better man and a better writer.

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[12] Rev. 6: 16.

The Christian religion has always been the root of progress. A noted scholar said of the University of Leyden: "The Senate chamber of Leyden's University is the most memorable hall of science." It was a group of Christian Hollanders, more than three hundred years ago, thankful to God for preservation of life and liberty, who founded Leyden University. An examination of a list of the twenty universities which were established in Europe between the years 1550 A. D. and 1700 A. D., will reveal the fact that they were all founded and maintained by some religious denomination. In America, Harvard University was founded by the Puritans, in 1636. Its first private benefactor was Rev. John Harvard, from whom it received its name. Rev. James Blair was active in establishing and became the first president of William and Mary College. It was founded in 1692. Almost all the early primary and higher schools of education were organized and supported by Christian men and women. Why, then, the meaningless cry of the rationalist that the Christian who does not accept the theory of evolution is about to impede the progress of education in general and science in particular? Some rationalists are endeavoring to show that the "stupendous progress" of science during the past century has been due to the teaching of evolution. Jesus properly characterized such men as "blind leaders of the blind." It is true that progress has been made, but it has not been the result of the teaching of evolution or the inherent wisdom of the agnostics. It has been the result of the larger and deeper influence of Christianity. In order to prove this, one needs merely to ask, what progress has been made in science or in any department of education in heathen lands where Christian missionaries have not gone? Compare fetish, Buddhist, or Mohammedan worshippers with Christians in their advance in civilization and science. Science is not harassed, or its progress impeded, by any argument which we have advanced, or any motive which may have been unexpressed. Let men search in the field of geology, zoology, botany, astronomy, anthropology, medicine, chemistry, physics, psychology, metallurgy, or any other branch of science, but let them always remember that God gives them the minds with which they work; that He has given them His Word as a general guide in that work; that He has created both matter and life by His Almighty power, and that He has given them intelligent and immortal souls in order that they may honor Him.

Why will men praise King James I. and the scholars who met at Westminster, Cambridge, and Oxford to give the well-known "Authorized Version" of the Bible to the world, and then lay that Book aside while they search in every other avenue of the world for a solution of that which it makes known in the simplest language? Why will men honor the name of William Wilberforce, as the man who overcame physical deformities and various handicaps, and who struck the shackles from the British slaves, and at the same time forget the fact that he cried, " Lord, be merciful to me, a sinner," in 1775, when his life lay all before him, and that he uttered the same prayer in 1833, when his work was done and he was passing out of this world? Why will teachers point their pupils, and men everywhere point their friends, to the works of Sir Walter Scott, and yet forget the last hours of that noted author, when his son-in-law, Mr. Lockhart, within reach of thousands of books, asked what book he should read, received the prompt reply from Sir Walter, " Need you ask? There is but one!—the Bible.' Why will men speak of William E. Gladstone as one of Britain's greatest statesmen and writers, and yet ignore his argument that the greatest of all books, the only infallible guide, is the Impregnable Rock of Holy Scripture? Why will men eulogize Abraham Lincoln in his stand for freedom and righteousness, and at the same time ignore the Book which taught him the use of the English language and the principles of liberty and justice which did so much for the world? Unquestionably the Christian's Bible has been, and is, the greatest incentive toward progress in every worthy department of education, wherever it has been received among the nations of the world.

SPIRITUAL DISCERNMENT

What, then, has been the difficulty when men have failed to see in the Bible and in the true religion an unparalleled blessing? The Apostle Paul, when writing to a church located in a great commercial and corrupt city, pointed out the root of the difficulty many centuries ago. " The natural man receiveth not the things of the Spirit of God: for they are foolishness unto him: neither can he know them, because they are spiritually discerned." [13]

CHRIST THE WAY

The scientist of today needs to come to Jesus Christ like the learned Nicodemus of old and sit at His feet as a little child. He should begin at the first of John and learn that Christ was in the beginning with God. That, "All things were made by him; and without him was not anything made that was made." He should learn, like Nicodemus, that he needs not merely life, but a new life which is born of the Spirit, in order to apprehend God and the things of God. Peter points out that all who were saved from the Flood in Noah's day were saved in the ark, and that all who are saved today are saved through the resurrected Christ. This is the heart and fountain of all truth. The greatest biologist and philosopher before Christ pointed out the great and enduring fact that, "The fear of the Lord is the beginning of knowledge." [14] This is the greatest fact that can be given to the present generation. Science alone cannot give it. Science can develop a man's brain, but it cannot give him a heart that will love and bless. The trained head and the unregenerate heart may combine to curse and destroy. Science can place in a man's hand a weapon that will kill, but it cannot transform his heart so that he shall desire to sacrifice and save. When science shall have classified all knowledge, it will place on the pinnacle of this mountain of accumulated facts the greatest of all facts, that Christ is the Way, the Truth and the Life.

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[13] 1 Cor. 2: 14.

[14] Prov. 1: 7.

The old stone book can point—does point to sin; it points to a fallen, sin-cursed, ruined world. But that is all that it can do, and here it leaves both the scholar and the proletarian. The written Book points to a way out. It points upward. It points to a Redeemer who can lift—has lifted—the curse of sin, and guides the way toward a land where there is no sin nor sorrow nor death. And here we have the harmony, the grandeur, the glory of the Two Books. They each have their message. Why confine ourselves, our pupils or our ideals, to the old stone book? Look into it! Read it, and read it rightly! But look into the Written Book, and there see the greatest fact of the universe! There see the One who, though He hated sin, came into a world cursed with it to redeem fallen men!

The Written Book points the geologist to One whose presence makes the mountains tremble,[15] whose touch causes them to smoke,[16] and whose voice calms the waves of the sea;[17] the astronomer to One who knows the number of the stars and calls them all by name;[18] the zoologist to One who calls all the beasts, creeping things, and flying fowl to praise Him;[19] the botanist to One purer than the lilies;[20] the embryologist to One who sees our substance yet being unperfect;[21] the anatomist to One who knows all our frame;[22] the physician to One who heals all our diseases; [23] the chemist to One whose blood makes the blackest sin whiter than the snow;[24] the physicist to One who conserves all matter;[25] the orthopedist to One who makes the lame walk;[26] the oculist to One who makes the blind see;[27] the psychologist to One who knows all man's thoughts;[28] the economist to One who sees that when goods are increased they are increased that eat them;[29] the physiologist to One who gives men strength in their old age;[30] the artist to One who sets His bow in the clouds;[31] the aeronaut to One who makes the clouds His chariot and who rides upon the wings of the wind;[32] the wireless telegraphist to One who takes the wings of the morning and bears His message to the uttermost part of the sea;[33] the electrician to One who uses the lightning as His messenger;[34] the meteorologist to One who has gathered the wind in His fists;[35] the agriculturalist to One who causes grass to grow for the cattle and the herb for the use of man;[36] the mineralogist to One who is more precious than gold;[37] and all, to One who is more radiant than the dawn,[38] more majestic than the mountains,[39] more glorious than the sun[40]—to Jesus Christ, the Son of the Living God.[41]

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[15] Ps. 114: 6.
[16] Ps. 144: 5.
[17] Mark 4: 39.
[18] Ps. 147: 4.
[19] Ps. 148: 10.
[20] Song of Solomon 2: 2.
[21] Ps. 139: 16.
[22] Ps. 103: 14.
[23] Ps. 103: 3.
[24] Isa. 1: 18.
[25] Eccl. 3: 14.
[26] Matt. 15: 31.
[27] Luke 7: 22.

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[28] Luke 6: 8.
[29] Eccl. 5: 11.
[30] Ps. 92: 14.
[31] Gen. 9: 13.
[32] Ps. 104: 3.
[33] Ps. 139: 9.
[34] Job. 38: 35.
[35] Prov. 30: 4.
[36] Ps. 104: 14.
[37] Ps. 19: 10.
[38] Ps. 19: 5.
[39] Song of Solomon 2: 8.
[40] Acts 26: 13.
[41] John 6: 69.

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